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(54) Title: ELECTRONIC COMMERCE SEARCH, RETRIEVAL AND TRANSACTION SYSTEM

(54) Titre: SYSTEME DE RECHERCHES, D'EXTRACTIONS ET DE TRANSACTIONS POUR LE COMMERCE ELECTRONIQUE

(57) Abstract

The invention provides methods and apparatus for implementing electronic commerce applications over the Internet or in other types of computer systems, in a manner which improves conditions for buying and selling for consumers and vendors. An illustrative embodiment is implemented in the form of an e-commerce web site which includes consumer-specific pages each corresponding to a particular consumer, vendor-specific pages each corresponding to a particular vendor, and a processing system which controls communication between the consumer-specific and vendor-specific pages. The processing system includes or otherwise has access to a set of servers and a corresponding set of databases for processing consumer requests. A given consumer request generated at a particular one of the consumer-specific pages is processed by the processing system such that information from one or more vendors associated with the vendor-specific pages can be supplied to the consumer via the consumer-specific page. For example, a vendor without a commerce-enabled web site can register with the system such that information from the vendor is delivered to the consumer as part of, e.g., a product comparison search. In other embodiments, the consumer-specific and vendor-specific pages may each be implemented as separate web sites which interact with the processing system to provide the desired functionality.

(57) Abrégé

La présente invention concerne des procédés et un appareil permettant la mise en oeuvre d'applications de commerce électronique via l'Internet ou dans d'autres types de systèmes informatiques, et ce, de façon améliorant sensiblement les conditions d'achat et de vente pour les consommateurs et les vendeurs. Une réalisation particulièrement caractéristique est mise en oeuvre sous la forme d'un site web de commerce électronique qui comprend des pages spécifiquement consommateur correspondant chacune à un consommateur particulier, des pages spécifiquement vendeur correspondant chacune à un vendeur particulier, et un système de traitement qui gère les échanges entre les pages consommateur et les pages vendeur. Le système de traitement comporte, ou a accès à, un ensemble de serveurs et à un ensemble correspondant de bases de données permettant le traitement des requêtes consommateurs. Une requête consommateur particulière générée au niveau de l'une des pages consommateur est traitée par le système de traitement de façon que l'information provenant d'au moins un vendeur associé aux pages vendeur puisse être fournie au consommateur via la page consommateur. Par exemple, un vendeur sans site web ouvert au commerce électronique peut se faire connaître du système de façon que l'information en provenance du vendeur soit fournie au consommateur, notamment à l'occasion d'une recherche en comparaison de produits. Selon d'autres réalisations, les pages consommateur et les pages vendeur peuvent se mettre en oeuvre chacune indépendamment sous forme de sites web en interaction avec le système de traitement de façon à fournir la fonction souhaitée.

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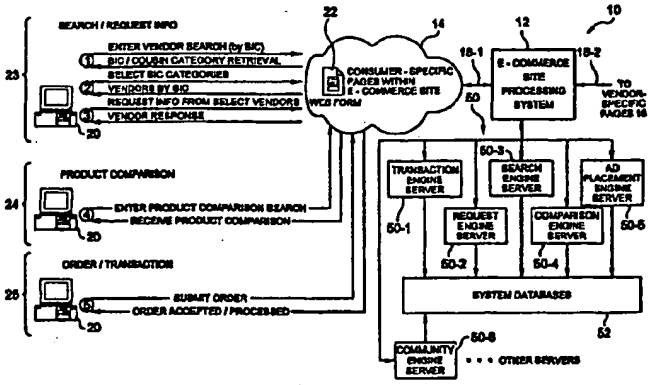

(57) Abstract

The invention provides methods and apparatus for implementing electronic commerce applications over the Internet or in other types of computer systems, in a manner which improves conditions for buying and selling for consumers and vendors. An illustrative embodiment is implemented in the form of an e-commerce web site which includes consumer-specific pages each corresponding to a particular consumer, vendor-specific pages each corresponding to a particular vendor, and a processing system which controls communication between the consumer-specific and vendor-specific pages. The processing system includes or otherwise has access to a set of servers and a corresponding set of databases for processing consumer requests. A given consumer request generated at a particular one of the consumer-specific pages is processed by the processing system such that information from one or more vendors associated with the vendor-specific pages can be supplied to the consumer via the consumer-specific page. For example, a vendor without a commerce-enabled web site can register with the system such that information from the vendor is delivered to the consumer as part of, e.g., a product comparison search. In other embodiments, the consumer-specific and vendor-specific pages may each be implemented as separate web sites which interact with the processing system to provide the desired functionality.

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Description

ELECTRONIC COMMERCE SEARCH, RETRIEVAL AND TRANSACTION SYSTEM

Related Application

The present application is a continuation-in-part of U.S. Patent Application Serial No. 09/191,564 filed November 13, 1998 in the name of inventors Albert R. Subbloie Jr. et al. and entitled "Electronic Commerce Search, Retrieval and Transaction System."

Field of the Invention

The present invention relates generally to systems for use in processing search requests, transactions and other electronic commerce communications over the Internet or other types of networks, and more particularly to systems that provide an interface between consumers and vendors in electronic commerce applications.

Background of the Invention

The explosive growth of the Internet and World Wide Web has led to the widespread implementation of a variety of e-commerce applications. For example, many companies have established corporate web sites that provide around-the-clock access to product or service information, and permit consumers to place orders on-line. These and other web-based e-commerce applications have fundamentally changed the nature of the vendor-consumer relationship from a primarily vendor-driven model which focuses on marketing and advertising, to a primarily consumer-driven model where a consumer takes the initiative, researches a particular product or service, makes qualified contact with selected vendors who meet his or her needs, and makes a purchase of a product or service.

Search and index engines have become a leading mechanism for consumers to locate and research information on the Internet. Search engines allow consumers to enter keyword information for product categories or company web sites, and provide access to hundreds of "hits" containing the search criteria. An index engine creates indexed lists of entries that consumers can utilize to find specific areas of interest as well as corresponding web sites. Based on these hits or indexes, consumers can quickly and easily go to the sites relevant to the search criteria. To assist consumers wishing to make on-line purchases, many of these engines have established pre-categorized selections based on various products and services that provide

access to e-commerce enabled web sites of the corresponding vendors. For example, nearly every major search engine provides access to at least one vendor site, selling anything from automobiles and books to computers and apparel. A number of web sites have emerged which are dedicated to providing on-line purchasing of particular categories of products or services. These sites include, for example, Amazon.com™, AutobyTel.com™, and Travelocity.com™. These sites are specifically geared towards providing consumers a one-stop shop for specific categories of products or services. Once consumers locate the product or service they desire, they are able to make a purchase on-line, and in many cases, are able to receive the product within 24 to 48 hours.

With the growth of e-commerce sites on the Web, specialty sites have emerged which provide users with the ability to compare the prices of specific products or services across several different vendors. These comparison sites offer consumers the ability to enter search criteria for a specific product, model number, etc. and receive prices from multiple vendors. Exemplary comparison sites such as those known as BottomDollar™, Jango™, and NetBuyer™ offer a wide range of products and services from a group of pre-established vendor partners. Once a consumer decides to order a given product or service, the comparison site allows the consumer to purchase the product on-line from the pre-established partner. Current comparison sites often focus on commodity items that have few differentiating factors, such as, for example, books, CDs, software and computer components. This allows for comparisons to be made since the differentiators are small, e.g., hardcover v. softcover, if any. Most of the comparison sites also have the above-noted drawback of being in relationships with just a few vendor sites, thereby limiting the number of actual comparisons that are made.

Despite the tremendous advances made in e-commerce via the Internet, current e-commerce solutions fall far short of providing anything approaching a so-called "perfect market" environment. A perfect market may be viewed as one in which consumers have access to complete, accurate and timely information concerning all companies which sell a given product or service, while vendors have access to complete, accurate and timely information concerning the consumers interested in their products and services. Although current e-commerce initiatives have dramatically increased the access of consumers to companies and their products and services, they fail to address adequately the need and desirability of appropriate market conditions for optimum buying and selling. For example, as noted above, comparison sites and other conventional e-commerce sites often provide information only from

those vendor sites for which a pre-established relationship is in place, such that consumers only receive price comparisons from an unduly limited number of companies. In addition, such comparison sites are generally unable to provide information from companies that do not have an established web site or other web presence, even though such companies may provide a better price than many of their on-line competitors. Moreover, many business web sites are not equipped with on-line ordering capability, but are instead used solely as a source of information dissemination and customer service. Thus, consumers are not able to buy product and services from these companies on-line. Even those companies that provide e-commerce enabled web sites typically offer an unduly limited selection of product and services, and in many cases only at list prices.

As is apparent from the above, conventional e-commerce systems fail to provide adequate information regarding available products and services, are limited to providing price comparisons for only a relatively small number of on-line vendors, and generally provide a less than optimum buying and selling environment.

Summary of the Invention

The invention solves the above-noted problems associated with conventional e-commerce systems by providing a system of integrated web-based hardware and software technologies that automates the exchange of information between consumers and vendors, for the purpose of facilitating e-commerce transactions. More particularly, the invention provides consumers and vendors with access to more complete, accurate and timely information than has heretofore been available in e-commerce applications, and automates the request/response process such that consumers are better able to interact with a wide variety of vendors, thereby facilitating the generation of e-commerce transactions. For example, an illustrative embodiment the invention provides an e-commerce web site which serves as a single access point for consumers to search for available vendors of any given product or service, regardless of whether or not the vendors have a commerce-enabled web site or other type of web presence. The invention allows consumers to automatically submit requests to a number of selected vendors of a given product or service. Consumers can view responses via consumer-specific pages of the e-commerce web site and request additional information or choose to purchase from a selected vendor. Vendors may be notified of consumer requests via vendor-specific pages, and permitted to automatically respond back to the consumer. Vendors utilizing, e.g.,

a response management system in conjunction with the invention can receive automatic notification of consumers requests, can access valuable internal and external data related to consumers making requests, and can provide automated response capabilities to received requests, dramatically decreasing the time required to reply to consumer requests.

In accordance with one aspect of the invention, an e-commerce search, retrieval and transaction system is provided which includes an e-commerce web site having a set of consumer-specific pages accessible to a number of consumers, a set of vendor-specific pages accessible to a number of vendors, and a processing system which controls communication between the consumer-specific and vendor-specific pages. The processing system includes or otherwise has access to a set of servers and a corresponding set of databases for processing consumer requests. A given consumer request generated at one of the consumer-specific pages is processed by the processing system such that information from one or more vendors, including a vendor without a web presence, can be supplied to the consumer via the consumer-specific pages. For example, a vendor without a commerce-enabled web site can register with the system such that information from the vendor is delivered to the consumer as part of, e.g., a product comparison search. In a conventional e-commerce system, by contrast, the absence of a web presence for the given vendor would generally prevent a consumer from receiving information from that vendor in an on-line product comparison search or other similar query. In other embodiments of the invention, the consumer-specific pages and vendor-specific pages may each be implemented as separate web sites which interact with the processing system to provide the desired functionality.

In accordance with another aspect of the invention, the consumer-specific pages may have associated therewith an individual home page for each participating consumer, such that responses from vendors directed to a given one of the consumers are posted to the corresponding individual home page of that consumer. Similarly, the vendor-specific pages may have associated therewith an individual home page for each participating vendor, such that requests from the consumers directed to a given one of the vendors are posted to the corresponding individual home page of that vendor. The vendors may be notified of consumer requests by any of a number of different techniques, including, e.g., e-mail, facsimile, CTI application message or broadcast message which includes an embedded identifier of the main e-commerce site, a posting to the individual home page of the vendor, or via a communication channel established between the e-commerce web site and a response management system

associated with the vendor. Consumers may be notified of vendor responses using similar techniques, e.g., e-mail, facsimile or a posting to the individual home page of the consumer. Again, these features of the consumer-specific and vendor-specific pages may be implemented in a single web site, or in separate web sites.

The invention provides a significantly improved buying and selling environment in part by providing consumers with a single point of access to more complete, accurate and timely information on vendors of a given product and service than has heretofore been available, regardless of whether a particular vendor has a web presence or not, while also providing vendors with access to more complete, accurate and timely information regarding consumers. The invention can thus create optimum buying and selling conditions, i.e., near-perfect market conditions, for a wide variety of e-commerce applications.

Brief Description of the Drawings

FIGS. 1, 2 and 3 illustrate portions of an illustrative embodiment of an electronic commerce search, retrieval and transaction system in accordance with the invention.

FIG. 4 is a diagram showing the relationship between different types of requests in the illustrative embodiment of the invention.

FIG. 5 shows the elements of an exemplary response management system (RMS) in accordance with the invention.

FIG. 6 is a flow diagram showing an example of the processing of requests utilizing the system of FIGS. 1 through 3 and the RMS of FIG. 5.

FIGS. 7A through 7F show a more detailed example of the processing of requests utilizing the system of FIGS. 1 through 3 and the RMS of FIG. 5.

Detailed Description of the Invention

The invention will be illustrated below in conjunction with an exemplary system for processing electronic commerce transactions. Although particularly well-suited for use in electronic commerce applications utilizing the Internet or other computer networks, the invention is not limited to use with any particular type of application, network or network communication protocol. For example, the invention may be applied to electronic commerce applications which utilize other types of networks, such as, for example, a wide area network, an intranet or extranet, a telephone, cable or satellite network, a wireless network such as a

cellular or paging network, or other type of network as well as combinations or portions of these and other networks.

The terms "query" and "request" as used herein are intended to include any type of information or transaction request that may be generated by a user. Examples of user queries which may be processed using the invention include plain-text queries manually entered by a user in a display generated by a browser, search engine, graphical user interface or other application program, voice-based queries entered by a user equipped with, e.g., a telephone, a computer with speech recognition software, etc., client requests generated in accordance with the Hypertext Transfer Protocol (HTTP), as well as combinations of these and other types of requests. The term "industry code" as used herein is intended to include Standard Industrial Classification (SIC) codes as well as any other type of codes or identifiers which may be used to specify goods or services. The term "web" as used herein is intended to include not only the World Wide Web portion of the Internet, but more generally any other portion of the Internet, the entire Internet itself, or other similar wide area, metropolitan area, national or international computer communication networks. The term "page" as used herein is intended to include a web page, any portion of a web page, an electronic document, form, window, display or any other piece of electronic information which may be delivered over a network and presented to a user in, e.g., a web browser or other client application program. A given page therefore may, but need not, be accessible via an identifier such as its own uniform resource locator (URL). Consumer-specific pages and vendor-specific pages are examples of pages which are accessible to particular consumers and vendors, respectively. For example, as will be described herein, a given consumer may have a consumer-specific home page on an electronic commerce web site in accordance with the invention. Similarly, a given vendor may have a vendor-specific home page on the electronic commerce web site. The term "consumer" as used herein is intended to include any user who requests information or otherwise communicates with a vendor using the e-commerce system of the invention, such as, for example, a home-based consumer, an office-based business buyer, and other types of users.

FIGS. 1, 2 and 3 show an illustrative embodiment of the invention in the form of an electronic commerce (e-commerce) search, retrieval and transaction system 10. The system 10 includes a combination of servers, one or more web sites, databases and software applications that provides an automated method for consumers and vendors to interact for the purpose of consummating a business transaction. As shown in FIGS. 1 and 2, the system 10 includes an

e-commerce web site comprising a processing system 12, a set of consumer-specific pages 14 and a set of vendor-specific pages 16. The electronic web site may be accessed in a conventional manner, e.g., by a user entering a designated URL into a web browser or other client application program. The processing system 12 may be, for example, a computer or group of computers. The processing system 12 interacts with the sets of pages 14, 16 as indicated at 18-1 and 18-2, respectively. Each of the consumer-specific pages 14 in the illustrative embodiment corresponds generally to a single consumer who has registered with or otherwise associated himself or herself with the e-commerce web site. Similarly, each of the vendor-specific pages 16 corresponds generally to a single vendor who has registered with or otherwise associated themselves with the e-commerce web site. Communications between the consumer-specific pages 14 and a corresponding set of consumers, and between the vendor-specific pages 16 and a corresponding set of vendors, may be, for example, via Transmission Control Protocol/Internet protocol (TCP/IP) connections established over the Internet in a conventional manner.

A given consumer uses a computer 20 to access a corresponding one of the consumer-specific pages 14, e.g., by accessing the e-commerce web site via entry of the appropriate URL, and then selecting an option at the site for providing access to a consumer-specific page. Communications between the computer 20 and the consumer-specific pages 14 are via conventional Internet connections. One or more of the consumer-specific pages 14 may incorporate a web form 22 which has a number of predetermined fields in which a given consumer can enter information. The consumer-specific pages 14 serve as a primary entry point for consumers to the e-commerce web site of the system 10. This site may be accessed by the consumers directly, through one or more portal partners, or in any other suitable manner. As will be described in greater detail below, from this site consumers can, e.g., enter a new search or view responses from previously entered requests. It should be noted that the invention may be configured to receive consumer requests from a wide variety of devices other than computer 20. For example, consumer requests may be generated using a telephone, an IP telephony device, a set-top box associated with a television set, a mobile computer, a hand-held computing device such as a personal digital assistant (PDA), or any other type of device suitable for accessing a web site.

The consumer-specific pages 14 may include individual "home" pages for different consumers. For example, in order to view vendor responses, a given consumer can enter a

password or other identifying information which provides access to a home page established for that consumer within the consumer-specific pages 14. From this page, the consumer can review current and past requests, current and past responses, submit additional requests, compare received responses, and order a given product or service. This information is maintained and stored by the system for a predetermined period of time, which can be set by the consumer within a designated allowable range. Other consumer information can be managed and maintained from this page including, for example, password information, preferred notification method, purchase criteria, shipping instructions, and preferred method of payment. In alternative embodiments of the invention, the individual consumer home pages on the system may be established and maintained on a separate web site corresponding to the set of consumer-specific pages 14. In this case, consumers may enter the consumer-specific pages web site via entry of a separate URL, but the consumer-specific pages will generally still be controlled by the processing system 12 of the main e-commerce web site. Information associated with the consumer-specific pages may be stored, for example, in one or more of a set of system databases 52, in a memory or memories associated with one or more of a set of servers 50 or the processing system 12, as well as combinations or portions of these and other storage locations, including a memory associated with one or more consumer computers 20.

A web browser or client application associated with computer 20 may include a desktop navigational assistant (DNA) which facilitates the use of the system 10 by a consumer. For example, the DNA may be designed to facilitate the consumer interaction by bringing together the data that the consumer wants, and applications that manipulate that data within a web browser environment. It may also allow the user to maintain the data off-line, within the client environment, rather than having to return to the processing system 12 repeatedly to obtain, analyze and access the data that the consumer already "owns," e.g., from previous interactions with the system. The DNA may also provide controlled access to the consumer-specific page established for the consumer on the system. This allows the consumer to have, e.g., secure anonymous communication with vendors, yet avoids the problem of junk e-mail and providing information to a vendor that may intrude on the consumer's privacy. A consumer equipped with a core DNA may be provided with the ability to update the information within that DNA, to modify the DNA, e.g., by saving on top of it, or to enhance the DNA, e.g., by adding comparison or other features to the core DNA, at any time. An exemplary set of features provided by a DNA in accordance with the invention includes: persistent storage of

information; one or more applications and/or applets which allow consumers to store, retrieve, manage and analyze information both on-line and off-line; automation of information and quote requests; instant ranking of requests via multiple purchase criteria; customized selection of purchase criteria such as price, selection, availability, location, warrantee and finance options, etc.; and facilitation of order processing. Alternative DNAs may incorporate only a subset of these features, and may also include features other than those listed above.

The set of vendor-specific pages 16 serves as a primary entry point for vendors to the e-commerce web site of the system 10. Like the consumer-specific pages 14, the vendor-specific pages 16 may be accessed directly, through one or more portal partners, or in any other suitable manner. For example, a given vendor can enter the URL for the main e-commerce web site, and then select an option providing access to a vendor-specific page. Vendors accessing the e-commerce site can choose to register with the system, verify and change vendor profile information, and access an individual "home" page within the set of vendor-specific pages 16. Such a home page may be established on the e-commerce site, e.g., for any vendor who has registered with the system and selected a valid password. From this page, a vendor will be able to view past and current consumer requests, respond to requests, and maintain vendor profile information such as notification method, company data, and product and service information. Like the consumer-specific pages, the vendor-specific pages on the system may be maintained as a separate web site in alternative embodiments, and this separate web site may be accessible via a URL which is different than that of the main e-commerce site or any separate consumer-specific pages site. Information associated with the consumer-specific pages may be stored, for example, in one or more of the system databases 52, in a memory or memories associated with one or more of the servers 50 or the processing system 12, as well as combinations or portions of these and other storage locations.

In the illustrative embodiment, as shown in FIG. 1, the interaction of a given consumer with a corresponding one of the consumer-specific pages 14 may include a search/request information stage 23, a product comparison stage 24, and an order/transaction stage 25. In each of the stages, requests or other information entered by the consumer via one or more of the pages 14 are supplied, if necessary, to the processing system 12. The information may be entered using the web form 22, which may include different portions, windows, fields, etc. for each of the stages 23, 24 and 25. Alternatively, a different web form 22 may be generated by one or more of the pages 14 for each of the stages. The processing system 12 accesses the

servers 50 in order to process the information entered by the consumer, and formulates a suitable response which is supplied to the consumer via consumer-specific pages 14 and computer 20. In the portion of the search/request information stage 23 designated as step 1, the consumer initiates a vendor search by Standard Industrial Classification (SIC), e.g., by selecting from a number of available search modes, and entering keywords characterizing the products or services of interest. It should be understood that references herein to SIC codes are by way of illustration only, and that the invention can be used with other types of industry codes, as well as other types of identifiers of products or services.

A response generated by processing system 12 in step 1 of stage 23 includes retrieved SIC categories and corresponding "cousins" SIC categories. The cousins categories represent, e.g., categories of products or services which may be related in a non-hierarchical, e.g., non-parent/child, manner to the SIC categories which correspond directly to the keywords entered by the consumer. These and other cousins relationships are described in greater detail in U.S. Patent Application Serial No. 09/084,810 filed May 26, 1998 in the name of inventors J.M. Ivler and Frank Rubin and entitled "Query Processing Based on Associated Industry Codes," which is incorporated by reference herein. In step 2 of stage 23, the consumer selects a number of SIC categories from among the categories retrieved in step 1. The processing system 12 responds via one of the consumer-specific pages 14 with a list of vendors for the selected SIC categories. In step 3 of stage 23, the consumer requests information from one or more of the vendors, and the processing system 12 responds via one of the consumer-specific pages 14 with the vendor response or responses.

In the product comparison stage 24, which includes a single step 4 in this embodiment, the consumer selects a product comparison search from among a number of available options provided by the e-commerce web site. Alternatively, the type of search desired by the consumer could be automatically inferred from information entered by the consumer, e.g., if a consumer enters a specific type of product it may be inferred that the consumer would desire a product comparison search. The processing system 12, operating in conjunction with one or more of the servers 50 and databases 52, generates comparison information in a manner to be described in greater detail below, and delivers the information in a response to the consumer. Similar comparisons could be generated for services. In the order/transaction stage 24, which includes a single step 5 in this embodiment, the consumer submits an order for a particular product or service, e.g., based on the results of the comparison search in stage 24. The

processing system 12 delivers the order to the appropriate vendor, and sends an acknowledgement to the consumer that the order has been, e.g., accepted by the vendor and/or processed. Additional examples regarding certain of the processing operations associated with stages 23, 24 and 25 will be described in greater detail in conjunction with FIGS. 4 through 7F below.

Referring to FIG. 2, one or more of the vendor-specific pages 16 may include a web form 28 with a number of predetermined portions, windows, fields, etc. in which information can be entered by a given vendor and/or a service agency partner associated with the vendor. A number of vendors 30A, 30B, 30C and 30D and a service agency partner 32 communicate with the vendor-specific pages 16 of the e-commerce web site via, e.g., conventional Internet connections. Computers 34A, 34B, 34C, 34D and 34 are associated with the vendors 30A, 30B, 30C and 30D and service agency partner 32, respectively. A response management system 40-1 equipped with response management software 42-1 is associated with the vendor 30D. A direct connection is shown between computer 34D of vendor 30D and the response management system 40-1. Response management system 40-1 is also coupled to a set of databases 44 which in this embodiment includes internal data 44-1, external data 44-2, data storage software (DSS) systems 44-3, enterprise resource planning (ERP) and other information 44-4. Another response management system 40-2 equipped with response management software 42-2 is associated with the service agency partner 32. It should be understood that each of the vendors, the service agency partner and the response management systems in FIG. 2 may be systems including large numbers of computers, databases, networks and other processing, storage or communication elements, and their association with a single computer or other device in FIG. 2 is for simplicity of illustration. The computers 34A, 34B, 34C, 34D and 34, as well as other computers shown or described in a similar manner herein, may therefore each be viewed as groups of computers and other processing, storage or communication elements arranged in a conventional manner.

In accordance with the invention, the vendors that can be supported by the e-commerce system 10 need not all have a web presence, e.g., a commerce-enabled web site or other type of vendor-specific web site. It will be assumed for the following description that none of the vendors 30A, 30B, 30C and 30D have a web presence, although the invention can of course also be applied to vendors which do have a web presence. As shown in FIG. 2, the vendor 30A has both e-mail and web access, the vendor 30B has a fax capability and web access, the vendor

30C has web access only, and the vendor 30D has web access that provides a direct connection to the e-commerce web site via the response management system 40-1 and computer 34D. Similarly, the service agency partner 32 has a direct connection to the e-commerce web site via the response management system 40-2 and computer 34.

The communication capabilities of the various vendors influence the manner in which communications take place between the vendors and elements of the e-commerce web site, e.g., vendor-specific pages 16 and the processing system 12. For example, the e-commerce web site in the illustrative embodiment communicates with vendor 30A, e.g., to send a request for information or an order, using an e-mail alert with an embedded URL specifying the location of the main e-commerce web site. The vendor 30A can then access the e-commerce web site and the vendor-specific pages 16 via the embedded URL. The e-commerce web site communicates with vendor 30B using a fax notification with a URL specifying the corresponding e-commerce web site, such that the vendor 30B then accesses the web site using the embedded URL. The e-commerce web site communicates with the vendor 30C via a periodic web check, which may be performed manually by a management entity, e.g., a system administrator, maintenance entity, service agency partner, etc. associated with the vendor-specific pages 16 and processing system 12. Again, the vendor 30C responds to a URL specifying the e-commerce web site which includes the vendor-specific pages 16. It should be noted that types of vendor access other than those described herein may also be utilized in the system 10.

The vendor 30D in FIG. 2 communicates with the e-commerce web site through a direct connection established via the response management system 40-1. The e-commerce web site uses this connection to provide a real-time alert notification, via a response application program supported by response management system 40-1, to the vendor 30D in the event of, e.g., a request for information or an order. The vendor 30D responds, also via the response application program, directly to, e.g., a corresponding one of the vendor-specific pages 16 of the e-commerce web site. Order requests and responses also flow between one of the vendor-specific pages 16 and the vendor 30D using the response management system 40-1, as indicated at 35D. The service agency partner 32 has a similar direct connection with the vendor-specific pages 16 of the e-commerce web site via the response management system 40-2, and order requests and responses flow between, e.g., one of the vendor-specific pages 16 and the service agency partner 32 as indicated at 35. The e-commerce web site provides real-time alert

notification to service agency partner 32, via a response application program supported by response management system 40-2, and the service agency partner 32 responds, also via the response application program, directly to one of the vendor-specific pages 16 of the web site. The response management systems 40-1 and 40-2 are generally implemented as completely separate systems.

Advantageously, the invention allows vendors with different communication capabilities, e.g., the vendors 30A, 30B, 30C and 30D, to communicate with an e-commerce web site including a set of vendor-specific pages 16 and corresponding processing system 12, such that consumers are provided with the widest possible range of sources of various products and services. For example, vendor 30D, which is assumed to have web access but no web presence in the illustrative embodiment, is nonetheless accessible to consumers through the e-commerce web site via a direct connection with the response management system 40-1. As a result, consumers accessing the consumer-specific pages 14 may obtain, e.g., product comparison information from vendor 30D, even though that vendor does not have a web presence. In a conventional e-commerce system, the absence of a web presence for vendor 30D would generally prevent a consumer from receiving information from that vendor in, e.g., an on-line product comparison search.

Referring again to FIG. 1, the processing system 12 is coupled to the set of servers 50 which in this embodiment includes a transaction engine server 50-1, a request engine server 50-2, a search engine server 50-3, a comparison engine server 50-4, an ad placement server 50-5 and a community engine server 50-6. Alternative embodiments may include a number of additional servers, or a subset of the servers shown. Each of the servers is coupled to one or more of the set of system databases 52. The servers 50 may each represent a computer or a group of computers. One or more of the servers 50 may be co-located with the processing system 12 of the e-commerce web site, e.g., may be a part of the processing system 12, or may be connected with system 12 via a local area network or other type of network. Alternatively, one or more of the servers may be remote from the processing system 12 and may communicate with system 12 via an Internet connection or other conventional network connection.

FIG. 3 illustrates an exemplary arrangement of system databases 52 in greater detail. The databases 52 in this embodiment include transaction data 60-1, request data 60-2, vendors by SIC code 60-3, product/service data 60-4, advertising/placement data 60-5, product/service cross reference data 60-6, and cousin relationships by SIC code 60-7. The vendors by SIC code

60-3 may include, e.g., a global database of vendors based on SIC listings, while the cousin relationships by SIC code includes an enhanced database of "cousin" products/services cross referenced by SIC listing, e.g., car buyers may also want information from insurance, car stereos, finance suppliers, etc. The product/service data 60-4 may include information such as categories, brands, models, etc.

The databases 52 in this embodiment are interconnected as shown, and each is accessible to one or more of the servers 50-1 through 50-6. The interconnections may be via local area network, wide area network, Internet, or any other type of network. In addition, it should be noted that the databases 52 may represent different portions of a single database or a group of co-located or remote databases. The transaction data 60-1 is accessible to a service agency partner 70 equipped with a computer 71. The transaction data 60-1 is similarly accessible to an e-commerce partner 72 equipped with a computer 73. Similarly, the product/service data 60-4 is accessible to a vendor 74 equipped via a computer 75 providing web access, and the advertising/placement data 60-5 is accessible to a service agency/advertising placement partner 76 equipped with a computer 77.

Associated with the vendor 74 is an agent based maintenance element 78, which uses an extensible mark-up language (XML) or other suitable technique for updating product/service data generated by vendor 74 and other vendors in the system. The system 10 further includes a maintenance web site 80 which accesses vendor data 60-3 in order to provide changes, updates, etc. to the stored data. In the embodiment shown, vendor 82 and service agency partner 84 are accessing the maintenance web site 80, but other partner and/or vendor elements of system 10 could also access maintenance web site 80. Communications between one or more of the databases and partner or vendor elements 70, 72, 74, 76, 82 and 84 may be via conventional Internet connections established using, e.g., web access provided by the corresponding computers 71, 73, 75, 77, 83 and 85, respectively.

The response management systems 40-1 and 40-2 of FIG. 3 will now be described in greater detail. Either or both of these response management systems 40-1 may be implemented, e.g., as a suite of client/server, component based applications which are designed to automate the notification, analysis, response and management of consumer requests generated in the system 10. These response management systems may be based at least in part on known call center software products, such as one or more of the EDGE™ products available from Information Management Associates, Inc. of Shelton, Connecticut. By utilizing a response

management system in conjunction with the system 10, vendors will be able, for example, to receive real-time notification of consumer requests, access real-time data regarding consumers, automatically respond to standard inquiries, track consumer information and transactions, and access real-time external data on consumers, e.g., demographic and psychographic data, to aid in the response. An illustrative embodiment of a response management system in accordance with the invention includes a universal access (UA)-channel management (CM) component, an automatic response component, an outbound response component, a data access component, a demand chain management (DCM) component, and a customer interaction software (CIS) application component. Alternative embodiments of a response management system in accordance with the invention may include any subset of these components, as well as additional components not specifically noted.

The UA-CM component allows vendors to utilize a channel that will receive real-time notifications of consumer requests for product information. Vendors are able to customize UA, e.g., to alert agents to incoming requests, to route incoming requests to specific "agents" who are trained to respond to system requests, to view requests in a universal in-box available to all authorized agents, and to respond immediately to requests. Vendors may also utilize UA to integrate all incoming forms of consumer requests such as telephony, print, fax, e-mail and web. The automatic response component allows vendors to establish criteria for the parsing, routing and automatic reply to incoming requests. This will, e.g., allow vendors to generate automated responses to minimize agent involvement, reduce response time and provide round-the-clock customer service. The outbound response component provides the vendor with multiple outbound methods to respond to consumer responses including fax, e-mail, telephone and web.

The data access component of the response management system 40-1 or 40-2 provides real-time access to various sources of information for retrieving valuable data to assist vendors when responding to a consumer request. This information can include internal data regarding the consumer's history with the vendor from sources such as mainframes, ERP applications, or data stores. In addition, data can be accessed from external sources to retrieve credit information, demographic information, and psychographic information. The DCM component allows vendors to apply sophisticated demand analysis to consumer requests to ensure the most optimum selling outcome. The DCM component provides real-time demand ranking based on vendor assigned profiling, as well as suggested response strategies. The CIS application

component may include, e.g., an integrated suite of customer interaction applications such as account management, customer service, workflow, opportunity management, etc. It should be noted that these applications can also be used to manage all of the vendor's customer interactions across all communication channels.

The operation of an exemplary RMS in accordance with the invention will now be described in greater detail with reference to FIGS. 4 through 7F. The RMS referred to in the following description may be, e.g., RMS 40-1 or 40-2 of the e-commerce search, retrieval and transaction system 10 of FIGS. 1, 2 and 3, a single RMS incorporating both RMS 40-1 and 40-2 or portions thereof, or any other suitable implementation providing the described functions. It should be noted that the RMS to be described with reference to FIGS. 4 through 7F, is assumed not to include operator or agent processes, e.g., such processes are assumed for purposes of illustration to be part of "other processes" distinct from the RMS as shown in FIGS. 7A-7F. In other embodiments, such as an embodiment incorporating the UA-CM, DCM and CIS components as described previously, the operator or agent functions may be part of the RMS. In either case, an RMS in accordance with the invention may be implemented at least in part as software which provides an automatic response for a particular vender to any request for quote or other information from the processing system 12 of FIG. 1.

FIG. 4 is a diagram showing the relationship between a number of examples of different types of buyer requests that may arise in the system 10, and will be used to illustrate the operation of an RMS in accordance with the invention. Although these examples are directed to a simple transaction, i.e., a transaction in which a buyer first seeks out their options and then seeks out the price and deal structure, the invention can be applied to numerous other types of transactions. The term "buyer" as used in conjunction with the embodiments of FIGS. 4 through 7F herein is intended to include consumers as that term was previously defined, i.e., the term "buyer" is intended to include home-based consumers, business buyers, and other types of users of the e-commerce search, retrieval and transaction system 10.

The example requests shown in FIG. 4 include a request for information (RFI) 100, a request for quote (RFQ) 102, and a request for negotiation (RN) 104. The RFI 100 is a general request initiated by a buyer that is seeking clarification or suggestions on what model or product they should buy, e.g., information on products that meet certain requirements. The RFI 100 may be formatted using a supplied form or template, e.g., the web form 22 of FIG. 1 as previously described, the maintenance of which may be the responsibility of, e.g., a service

agency partner who "owns" the corresponding market, or the operator of the e-commerce system 10 and/or processing system 12. The RFQ is a request that asks for a price on a specific model or product. It triggers a set of actions that are more involved than a simple RFI, i.e., a profile may be filled out or appended, a transaction number assigned, and a closed loop process put in place. The RN 104 is used in situations in which there is a need for a final loop back to the vender requesting a better price than what was provided, or other vendor concession. In this case, the vender may be required to consider this request and reply with a better price and/or terms or an indication that the previous price and/or terms are the best they can offer.

It should be emphasized that the requests shown in FIG. 4 are exemplary only, and other requests suitable for use with the invention may be formulated or arranged in many different ways. For example, a given RFI may also incorporate an RFQ, such that a given vendor responds not only with product information but also with pricing information. As another example, a single request could incorporate both an RFQ and an RN, e.g., in a situation in which a buyer is already knowledgeable about prices and desires to submit a negotiation proposal in conjunction with a request for a price.

FIG. 5 shows the elements of an exemplary RMS 105 in accordance with an illustrative embodiment of the invention. As previously noted, the RMS 105 may represent, e.g., RMS 40-1 or 40-2 of FIG. 2, a combination or subset of these elements, or other suitable implementation of one or more computers and/or other system elements. The RMS 105 may be associated with a single vendor or with a number of different vendors. The RMS 105 in this embodiment is implemented at least in part in software, and includes a number of distinct software components which together support the full automation of responses to external requests for product information or pricing. The RMS 105 includes a product model file 110, a product matching system 112, a vendor attributes file 114, a legacy interface 116, a customer master file 118, a transaction history file and analysis system 120, an order processing file 122, and a customer communication system 124, each of which will be described in greater detail below. These components may be implemented as distinct, stand-alone software modules, or as an associated set of modules or other types of programs.

The product model file 110 serves as a repository of information tied to each product that a given vender wants to sell through the e-commerce system 10. In addition to basic data such as physical attributes and description, a record for a particular product may include, e.g., a listing of advantages, physical dimensions, pictures of the product, an audio description, etc.

Price information, including list prices, current prices and special prices, are also included. The different types of information in the product model file may be generated by the vendor and/or supplied by the manufacturer. It is generally desirable that the presentation of this information to the buyer be made in a consistent and efficient manner, with the basic data being provided into a presentation template or other type of form that the vender has, e.g., created or chosen from a list of standard forms supported by the e-commerce system 10.

The product matching system 112 in the RMS 105 is set up by the vender to provide the ability to recommend a given product or products given a set of attributes provided in an RFI 100 received from the processing system 12. The set of attributes may be provided to the buyer when they indicate interest in a particular product category. The selection may be hierarchical in nature, but should be open enough to allow the vender to recommend a product or products of their choosing. The product matching system 112 also includes the capability for developing and maintaining a product matching algorithm. For example, RFI requests may initially be processed manually, with the choices automatically used to build an algorithm matrix. A configuration wizard may be provided that will provide the vender with the ability to associate products with standard request attributes in a template. A review function may be included to provide the vender with the ability to easily review their recommendations.

The vender attributes file 114 contains general information about the vender, such as address, location (e.g., Lat./Long.), directions, service levels, size, hours of operation, etc. It may also include, e.g., an overall statement on quality or service, or any other non-price attributes that the vender wants to provide that will "sell" the customer on using them over another vender. This vendor information or suitable portions thereof may be transmitted to the buyer in response to an RFI, RFQ or RN.

The legacy interface system 116 is a set of software tools and other programs designed to provide an interface to the vender's inventory system and/or other type of business-related system, e.g., an accounting system. This interface may be used in the initial setup of the system, e.g., for loading in product data, and also as part of an ongoing process that will check inventory to make sure a particular model is in stock when an RFQ is received. If real time access is not possible, then a mechanism may be included for accessing a copy of the inventory file, which may be loaded into the RMS 105 at predetermined intervals, e.g., daily. If a vender does not have an inventory system or does not want to interface the their inventory system or other business-related system directly to the e-commerce system 10, the vendor can designate

that certain items are "always" in stock, and for other items, indicate that a message must be sent to an operator for determination of inventory status.

The customer master file 118 includes records that are used to track customers, e.g., information on the customers who have made a purchase through the e-commerce system 10. Once a given customer places an order, a record is created in the customer master file 118 to track that customer. Prior to this, the process in this embodiment has maintained the customer's anonymity, although in other implementations it may be advantageous to create, e.g., a temporary lead/prospect file from information passed to the RMS 105 by the processing system 12. The customer master file 118 will generally contain key information about the customer, including name, address, correspondence preference, purchase history, and profile. Export and import functions may be provided so those venders with appropriate software can consolidate, characterize and otherwise manipulate the information from the customer master file.

The transaction history file and analysis engine 120 records history of both RFI and RFQ requests, including the product requested, price provided and outcome. A record may be created in the transaction history file each time a request is received from the processing system 12, regardless of whether that request is an RFI or RFQ. Key data is retained to enable the vender to review and analyze their level of participation in e-commerce activities, as well as how well they have done (e.g., a "won/lost" record). The transaction history file and analysis engine 120 may be configured to pay particular attention to the impact of pricing and other attributes on winning business. This element of the RMS 105 provides the historical data that will help the vender understand their business situation so that they can modify pricing levels or other policies to suit new strategies and respond to changes in the market. The transaction history file and analysis engine 120 may thus be viewed as providing a "command post" overview of the progress and evolution of the e-commerce system for the vendor.

The order processing file 122 contains templates or other types of forms for placing on-line orders, confirming ship-to status, securing payment through credit cards or other payment mechanisms, and performing other functions. The templates or other forms may be maintained by the vender, e.g., with the help of wizards to implement global changes, etc. The completed templates or other forms may be output from the RMS 105 to a paper printout, or electronically to another order system.

The customer communication system 124 contains mechanisms for interacting and communicating with customers after they have placed an order. The system 124 provides communications via a variety of media, including e-mail, fax, voice response, regular mail, etc., in order to keep the customer informed about their order. The system 124 is set up in this embodiment to confirm the receipt of order and provide expected ship date, to confirm shipping, and to follow-up with the customer to determine their level of satisfaction. Other functions may also be included. For example, if there is a "cross selling" opportunity, at the appropriate time (e.g., as set by the vender), a follow-up may be sent offering a related item.

FIG. 6 is a flow diagram showing an example of the processing of RFIs, RFQs and RNs utilizing the system of FIGS. 1 through 3 and the RMS of FIG. 5. Blocks 130, 134, 138 and 142 illustrate processing steps carried out by a buyer and/or the processing system 12 of e-commerce system 10. Blocks 132, 136, 140, 144 and 146 illustrate processing steps carried out by the RMS 105. In block 130, a buyer initiates an RFI using a product template or other suitable form to request "something that fits needs" as specified by the buyer. The product template may be maintained, e.g., by a service agency partner. The RFI in this example is shown as a request for information on a refrigerator, and may include, e.g., requirements regarding size, freezer, doors, and various other options. In block 132, the RMS 105 deciphers the RFI, uses the product matching system 112 to select model(s), formats a reply, which as previously noted could include pictures and/or audio, and logs the transaction, e.g., as part of an internal count and categorization of requests. The selection of multiple models indicates that it is possible for a vendor to respond with multiple suggested solutions.

In block 134, an e-mail or other type of response message, e.g., a substantially instantaneous response message, is sent by the processing system 12 to the buyer when a sufficient number of vendor responses have been received. The buyer then signs into the e-commerce web site in the manner previously described in conjunction with FIG.1 to review the replies. The buyer then selects various models for which he or she desires to generate an RFQ. The buyer has the option to go back to only those vendors who responded to the RFI, or to send RFQs to a more general group of vendors, e.g., with the system 12 determining a set of vendors which carry the chosen brands. In block 136, the RMS 105 receives a given RFQ. For the given RFQ, the RMS 105 deciphers which models are being requested, checks inventory, checks the pricing for the models in stock, and prepares a reply including pricing, shipping and

handling costs, and other relevant information. The RMS then logs the transaction and sends out the reply with a reference number.

In block 138, after a designated critical number of vendor responses have been received, the processing system 12 alerts the buyer via e-mail or other type of response message that he or she should sign-in and review the bids. The previously-described comparison engine server 50-4 of e-commerce system 10 may be configured to assist the buyer in sorting through the vendor responses, using a variety of different criteria. The buyer can then either proceed to purchase in block 142, or go back to one or more vendors with an RN in an attempt to negotiate a better price. In block 140, the RMS 105 receives an RN from the buyer. If the vendor supports this negotiation feature, the RN may be sent via message to an operator for determination. Alternatively, the RN may be processed automatically in accordance with negotiation parameters established by the vendor. In either case, a "final" quote may be returned to the buyer. Other embodiments may permit a sequence of multiple RNs and corresponding replies to pass between the buyer and the vendor.

In block 142, the buyer makes a decision to purchase, based either on a quote received in block 138 in response to an RFQ, or a quote generated in block 140 in response to an RN. Once the buyer selects a model for purchase, the processing system 12 will, e.g., check the buyer's credit card for authorization, and then pass on the order to the selected vendor, along with appropriate customer information such as name, address, shipping type, special instructions and reference number. In block 144, the RMS 105 receives the order from the processing system 12, and the reference number is used to identify the prior quote. The order is then printed or electronically entered into the vendor's processing system, and a win is logged for the quote. All of the other vendors who replied to an RFQ may be notified of the fact that they did not win the order, as indicated in block 146. The price and other reasons that the buyer chose the winning bid may also be transmitted. The reference number associated with the quote in step 136 is used by a given vendor to "close the loop" for that vendor with respect to that quote.

FIGS. 7A through 7F show a more detailed example of the processing of RFIs, RFQs and RNs utilizing the system of FIGS. 1 through 3 and the RMS of FIG. 5. As indicated in FIG. 7A, in this example it is assumed that a buyer associated with user terminal 20 of FIG. 1 interacts via a connection established through World-Wide Web (WWW) 150 with processing system 12, and that the processing system 12 interacts with RMS 105 also via a connection

established through WWW 150. A number of additional processes 152 are either associated with or interact with the RMS 105. Operations shown in FIGS. 7A through 7F under the heading of a particular system element, e.g., buyer, processing system, WWW, RMS, etc., are assumed to be carried out by that element.

Referring to FIG. 7A, in step 160 the buyer chooses a product category, e.g., consumer appliances, and a sub-category, e.g., refrigerators, for research. An RFI is generated using an RFI product template 162, and the RFI is sent by the processing system 12 to multiple vendors. The RMS 105 in step 164 determines that the request is an RFI. In step 166, if the request is a new request, the transaction history file of the RMS 105 is updated by one of the other processes 152 to include a transaction record which identifies the RFI and the recommended products. In step 168, the RMS identifies the proper product template for comparison. In step 170, the product matching system 112 uses a matching algorithm to determine the best product to recommend, e.g., from a predefined table. In step 172, one of the other processes 152 determines if unique questions have been asked in the RFI, and if so sends a message to a terminal screen of the vendor for response. In step 174, the product description and other information from the product model file 110, e.g., multi-media information such as pictures or audio, are linked with the response and delivered to the processing system 12. The system 12 in step 176 generates an RFI response screen that provides a listing of the various products recommended. The buyer is then alerted via e-mail that there are a number X of responses, and the buyer in step 178 signs into the e-commerce system 10 to review the responses.

In step 180 of FIG. 7B, the buyer uses the previously-described comparison engine to help make a selection from among the various vendor responses. The comparison engine may generate a display 182 which in this example compares attributes 1, 2, 3, 4 and 5 for three different products A, B and C. The comparison engine in step 184 permits a review of multi-media information by product, and in step 186 provides links to additional reference information. In step 188, specific product models are selected for pricing. A function 190 may be used to limit the number selected. The processing system 12 then generates an RFQ request screen 192, in which models for quotes are displayed for confirmation by the buyer. The buyer may add additional questions or special requests of the vendor, e.g., special delivery instructions. In step 194, the system 12 attaches a unique request identifier to the RFQ, and in step 196 automatically adds data such as the zip code of the buyer and a unique buyer identifier. In step 198, the requested models are priced from a table using the product model file 110 of

the RMS. One of the other processes 152 then updates the transaction history file of the RMS, as shown in step 200. In step 202, the vendor's operator answers questions and special requests. In step 204, the legacy interface 116 performs an inventory check, e.g., either on-line, by alert to operator, from table stored in RMS and updated daily, or by other suitable technique. The RMS in step 206 adds shipping and handling costs to the record.

Referring to FIG. 7C, the RMS in step 210 accesses the vendor attributes file 114, and other reasons to purchase from the vendor, as well as other information from the vendor attributes file, are attached to the record. In step 212, the processing system 12 generates a response pages for RFQs. A listing of responses is presented for the buyer, and includes the name of the vendor, their attributes, the price, and the response to special questions if any. The buyer is then alerted via e-mail or other type of message, e.g., substantially instantaneous message, that "X" responses have been received by the system 12. In step 214, the buyer signs into the system and reviews the responses. In step 216, the comparison engine generates a comparison of the response information, which in this example includes price, shipping and handling (S&H), question (Q1) response, and one or more attributes for model 1 of the product from vendors A and B, and for model 2 from vendor C. In step 218, the buyer uses the comparison engine to help make a selection from among the vendor responses.

In step 220 of FIG. 7D, the processing system generates an RN to permit the buyer to communicate with one or more vendors in a negotiation context. A given RN is sent to the RMS. As indicated in step 222, the RN could be handled automatically by the RMS, or referred directly to an operator at the vendor's site. In the latter case, the operator in step 224 reviews the request, and supplies a response to the RMS. The response is sent from the RMS to the buyer via the processing system 12. After the processing system determines in step 226 that the buyer has selected a winning bid, credit card or other type of payment authorization is obtained in step 228, and the RMS utilizes the order processing file 122 to present a template to the buyer for order entry. The template may be configured by the vendor, but retains a standard "look and feel" associated with the e-commerce system 10. The product to be purchased is identified from the unique transaction identifier. In step 232 the transaction history file of the RMS is updated by one of the other processes 152. A record in the customer master file 118 is created or updated by one of the other processes 152 with the customer profile, as shown in step 234. Order output options in this example include print, electronic message, and EDI output, as shown in step 236. In step 240, the customer communications

system 240 of the RMS alerts the buyer at key points in the process, i.e., acceptance, expected ship date, ship confirmation, etc. The alerts are sent to the buyer via e-mail, fax, phone, mail, etc.

In step 250 of FIG. 7E, the processing system 12 closes the loop on RFQ transactions by alerting all the non-winning vendors who submitted bids that a deal has been completed with another vendor. This provides a lost business alert to the other vendors. Step 252 indicates that the unique identifier number of the transaction, the winning product and bid price may be transmitted to the RMS. The RMS then updates won/lost information in the transaction history file, as indicated in step 254. A vendor reporting function is implemented in steps 256 through 262 using the RMS and one or more of the other processes 152. Step 256 indicates that records of RFIs, RFQs and won/lost information are stored in the transaction history file of the RMS. The transaction history file interacts with an analysis and price management system as shown in step 258 in order to provide vendor management with on-line, real-time reports, e.g., in the form of a display 259 including charts, plots or other suitably-arranged information. The analysis and price management system provides price update information to the product model file 110 in step 260, and allows the products recommended as part of, e.g., an RFI response by the RMS product matching system 112, to be updated in step 262.

FIG. 7F illustrates that information in the product model file 110 of the RMS, such as description, physical dimensions and specification, picture and audio description, electronic brochure, prices and price history, etc., may be updated by a number of different processes 152. The processes may be implemented using an audio input device 272, a scanner 274, an operator input 276, and an external file input 278. Other devices may also be used to input information into the RMS.

It should be noted that, although the RMS examples described in conjunction with FIGS. 4 through 7F are focused on e-commerce search, retrieval and transaction relating to product information, the invention is of course also applicable to other types of information, such as, e.g., service information. In addition, the specific arrangement of RMS elements illustrated in FIG. 5 is exemplary only, and other embodiments of the invention may include only a subset of these elements, and/or other elements not specifically shown.

The invention provides a significantly improved e-commerce buying and selling environment in part by providing consumers with a single point of access to more complete, accurate and timely information on vendors of a given product and service than has heretofore

been available, regardless of whether a particular vendor has a web presence or not. Using the invention, consumers are able, e.g., to generate requests for additional information or pricing from their choice of selected vendors; to receive responses from these vendors in a timely manner; to compare easily purchase attributes across multiple vendors; and to access the most efficient avenues to purchase a desired product or service. From the vendor perspective, the invention can, e.g., allow all vendors of a given product or service to be accessible to any and all consumers interested a vendor's product or service. Vendors can be notified of and receive requests from all consumers interested in vendors' products or services; can have real time access to relevant information regarding the consumer to maximize the vendor's ability to serve the consumer, e.g., past history information, credit worthiness and other psychographic and demographic information; and can respond quickly and efficiently to consumers request for information or to purchase a given product or service.

More particularly, the invention provides more complete, accurate and timely information to consumers in that it can provide access to all vendors for a given product or service, based on search criteria, e.g., product, price, availability, location, warrantee, financing, etc., defined by the consumer; can provide the greatest range in prices for a given product or server across the widest selection of vendors; can provide automated, autonomous, requests to selected vendors for product info, pricing, finance and warrantee options, etc.; can provide access to persistent information on a consumer accessible web page or via a downloadable applet for off-line analysis; can provide "cousin" relationship or other similar related information retrievals for a given search request, resulting in more comprehensive product options; and can provide product and service level filtering to expedite search retrievals and product comparisons. The invention provides more complete, accurate and timely information to vendors in that it can provide exposure to all available vendors, with or without a web presence, to all interested consumers demanding their products or services; can provide notification to vendors of requests made by interested consumers via response management system, e-mail, fax, etc.; can provide vendors with the ability to receive, manage and respond to consumer requests via a vendor accessible "home" page; can provide automated response systems to manage automate responses to consumer requests; and can provide access to maximum information related to each consumer including internal data and external information.

The above-described embodiments of the invention are intended to be illustrative only. For example, although the illustrative embodiment of FIGS. 1-3 utilizes sets of consumer-specific and vendor-specific pages associated with a single e-commerce web site, it will be apparent to those skilled in the art that the invention can also be implemented in an embodiment in which the functions of the consumer-specific and vendor-specific pages are implemented in separate web sites, e.g., a separate web site for the consumer-specific pages and a separate web site for the vendor-specific pages. Other alternative embodiments may utilize other arrangements of servers, web sites, databases, software applications and other components in order to provide the e-commerce functions described herein. Moreover, the processing operations described in conjunction with FIGS. 4 through 7F are examples only, and many other types of processing may be used. Various components of a system in accordance with the invention can be implemented in software, hardware, and various combinations thereof. The invention may therefore be embodied at least in part in software such as web browsers, search engines and other types of query-processing programs, and in hardware such as various arrangements of clients, servers, processors, memory, databases and other network elements. Such embodiments of the invention may include a computer readable medium such as a magnetic or optical disk. These and numerous other alternative embodiments within the scope of the following claims will be apparent to those skilled in the art.

Claims

Claims

What is claimed is:

1. A method of processing consumer requests in an electronic commerce system, the method comprising the steps of:

receiving the requests in a processing system associated with the electronic commerce system; and

delivering at least a subset of the requests to at least one response management system associated with at least a subset of a plurality of vendors, wherein the response management system is operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

2. The method of claim 1 further including the step of associating a plurality of vendor-specific pages, each corresponding to at least one of the plurality of vendors, with the electronic commerce web site.

3. The method of claim 1 wherein at least one of the consumer requests is generated by the consumer at least in part using a consumer-specific page associated with the electronic commerce web site, such that information from at least a subset of the plurality of vendors is supplied from the response management system to the consumer via the consumer-specific page of the electronic commerce web site.

4. The method of claim 1 wherein the response management system is associated with a service agency that provides response management functions for at least a subset of the vendors.

5. The method of claim 1 wherein the requests include one or more of a request for information, a request for quotation, and a request for negotiation.

6. The method of claim 1 wherein the response management system includes at least one of a universal access-channel management component, an automatic response component,

an outbound response component, a data access component, a demand chain management component, and a customer interaction software application component.

7. The method of claim 1 wherein the response management system includes a descriptive file for storing descriptive information regarding a product or service offered by one of the vendors.

8. The method of claim 1 wherein the response management system includes a matching system for matching information in one of the requests to an available product or service from one of the vendors.

9. The method of claim 1 wherein the response management system includes a vendor attributes file for storing descriptive information regarding at least one of the vendors.

10. The method of claim 1 wherein the response management system includes an interface to an inventory system of at least one of the vendors.

11. The method of claim 1 wherein the response management system includes a customer file for storing information regarding consumers who have completed a transaction in the system through the response management system.

12. The method of claim 1 wherein the response management system includes a transaction file for storing information regarding the requests.

13. The method of claim 1 wherein the response management system includes an order processing file for storing information regarding orders placed with at least one of the vendors.

14. The method of claim 1 wherein the response management system includes a customer communication system for delivering the response and other information to the consumer via the processing system.

15. An apparatus for processing consumer requests in an electronic commerce system, the apparatus comprising:

a processing system associated with the electronic commerce system and operative to deliver at least a subset of the requests to at least one response management system associated with at least a subset of a plurality of vendors, wherein the response management system is operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

16. An article of manufacture comprising a computer readable medium having computer readable code means embodied thereon, said computer readable code means comprising:

a step to deliver at least a subset of the requests from a processing system associated with an electronic commerce system to at least one response management system associated with at least a subset of a plurality of vendors, wherein the response management system is operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

17. A method of processing consumer requests in an electronic commerce system, the method comprising the step of:

delivering at least a subset of the requests to at least one response management system associated with at least a subset of a plurality of vendors, wherein the response management system is operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

18. A method of processing consumer requests in an electronic commerce system, the method comprising the step of:

receiving at least a subset of the requests in a response management system associated with at least a subset of a plurality of vendors, from a processing system associated with the electronic commerce system, wherein the response management system is operative

to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

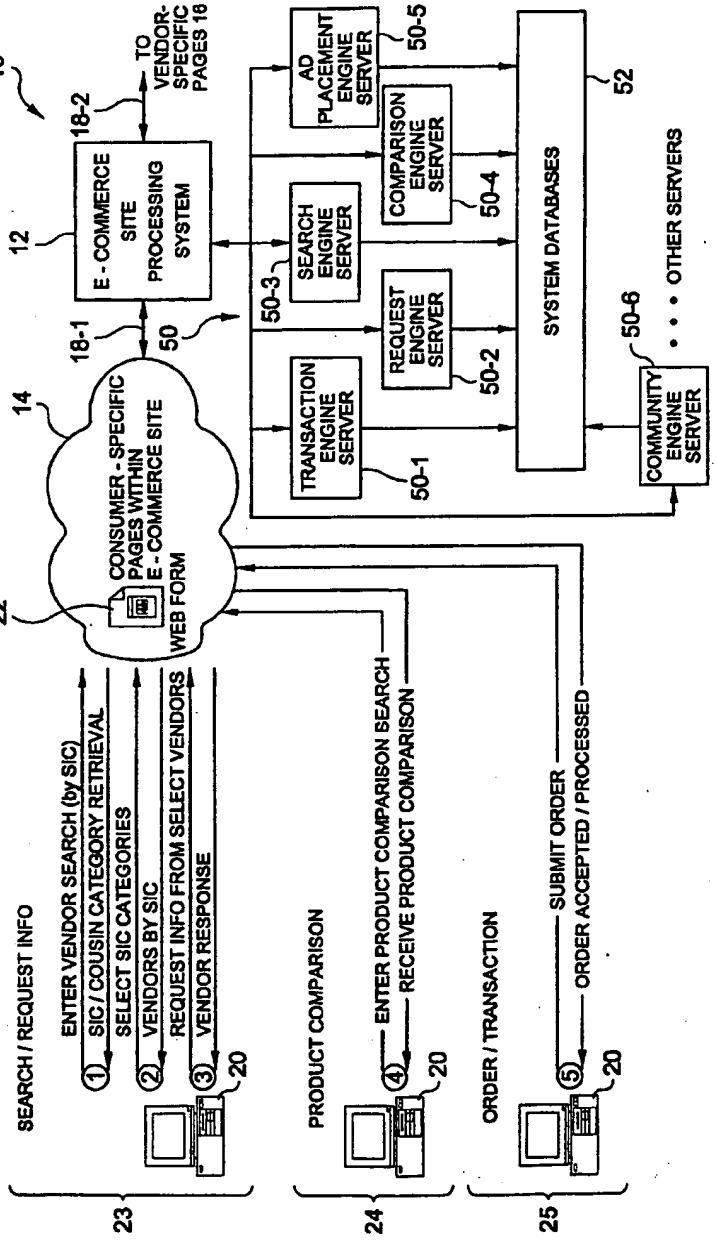
19. An apparatus for processing consumer requests in an electronic commerce system, the apparatus comprising:

a response management system associated with at least a subset of a plurality of vendors, and operative to receive at least a subset of the requests from a processing system associated with the electronic commerce system, wherein the response management system is further operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

20. An article of manufacture comprising a computer readable medium having computer readable code means embodied thereon, said computer readable code means comprising:

a step to receive at least a subset of the requests in a response management system associated with at least a subset of a plurality of vendors, from a processing system associated with the electronic commerce system, wherein the response management system is operative to generate a response to at least one of the requests and to deliver the response to the processing system, such that a consumer reviews information in the response through an electronic commerce web site associated with the processing system.

FIG. 1


10
12
E - COMMERCE SITE PROCESSING SYSTEM
18-1
18-2
TO VENDOR-SPECIFIC PAGES 18
50
14
CONSUMER - SPECIFIC PAGES WITHIN E - COMMERCE SITE
WEB FORM
22
TRANSACTION ENGINE SERVER
50-1
SEARCH ENGINE SERVER
50-3
REQUEST ENGINE SERVER
50-2
COMPARISON ENGINE SERVER
50-4
AD PLACEMENT ENGINE SERVER
50-5
SYSTEM DATABASES
52
COMMUNITY ENGINE SERVER
50-6
• • • OTHER SERVERS
SEARCH / REQUEST INFO
ENTER VENDOR SEARCH (by SIC)
1 SIC / COUSIN CATEGORY RETRIEVAL
SELECT SIC CATEGORIES
2 VENDORS BY SIC
REQUEST INFO FROM SELECT VENDORS
3 VENDOR RESPONSE
20
23
PRODUCT COMPARISON
ENTER PRODUCT COMPARISON SEARCH
4 RECEIVE PRODUCT COMPARISON
20
24
ORDER / TRANSACTION
SUBMIT ORDER
5 ORDER ACCEPTED / PROCESSED
20
25

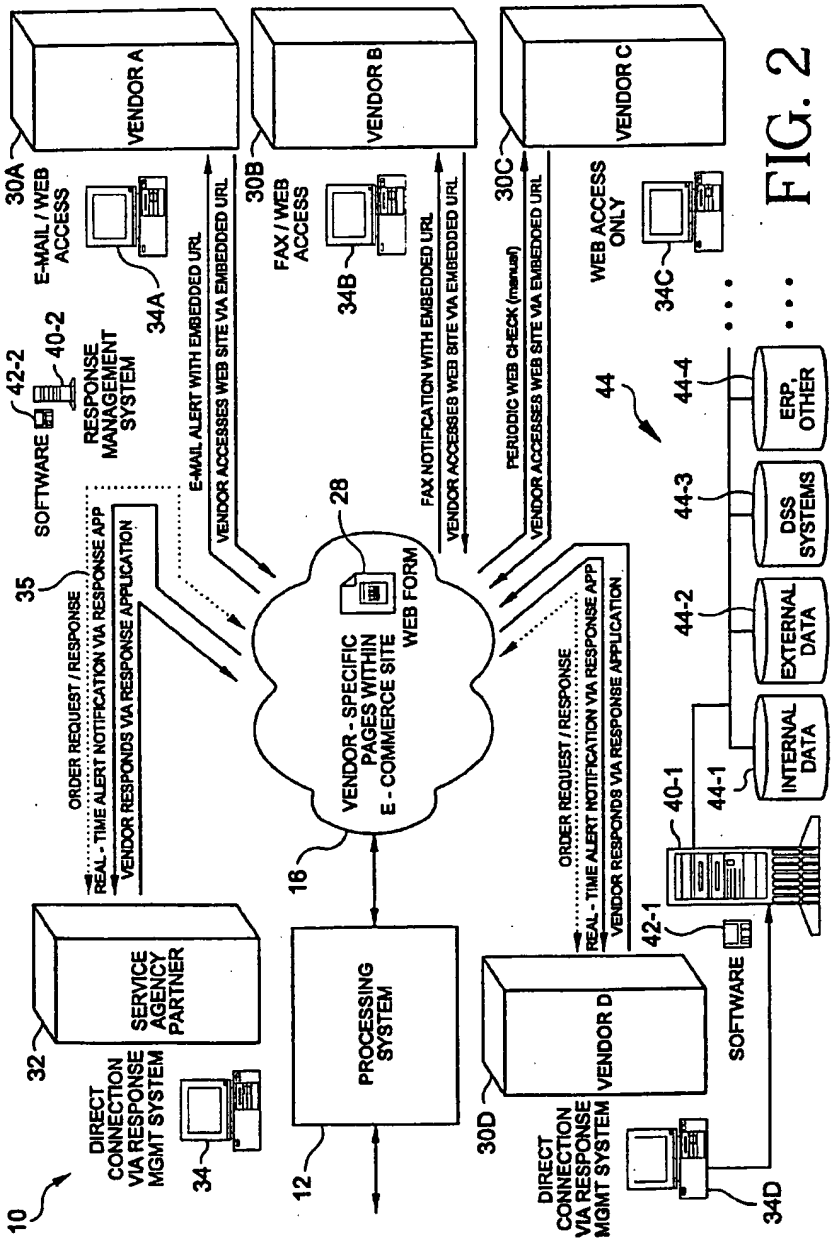

VENDOR A
VENDOR B
VENDOR C
30A
30B
30C
E-MAIL / WEB ACCESS
FAX / WEB ACCESS
WEB ACCESS ONLY
34A
34B
34C
42-2
40-2
SOFTWARE
RESPONSE MANAGEMENT SYSTEM
E-MAIL ALERT WITH EMBEDDED URL
VENDOR ACCESSES WEB SITE VIA EMBEDDED URL
FAX NOTIFICATION WITH EMBEDDED URL
VENDOR ACCESSES WEB SITE VIA EMBEDDED URL
PERIODIC WEB CHECK (manual)
VENDOR ACCESSES WEB SITE VIA EMBEDDED URL
35
ORDER REQUEST / RESPONSE
REAL - TIME ALERT NOTIFICATION VIA RESPONSE APP
VENDOR RESPONDS VIA RESPONSE APPLICATION
28
VENDOR - SPECIFIC PAGES WITHIN E - COMMERCE SITE
WEB FORM
44
44-4
ERP, OTHER
44-3
DSS SYSTEMS
44-2
EXTERNAL DATA
44-1
INTERNAL DATA
40-1
42-1
SOFTWARE
ORDER REQUEST / RESPONSE
REAL - TIME ALERT NOTIFICATION VIA RESPONSE APP
VENDOR RESPONDS VIA RESPONSE APPLICATION
16
SERVICE AGENCY PARTNER
32
DIRECT CONNECTION VIA RESPONSE MGMT SYSTEM
34
PROCESSING SYSTEM
12
VENDOR D
30D
DIRECT CONNECTION VIA RESPONSE MGMT SYSTEM
34D
10

FIG. 2

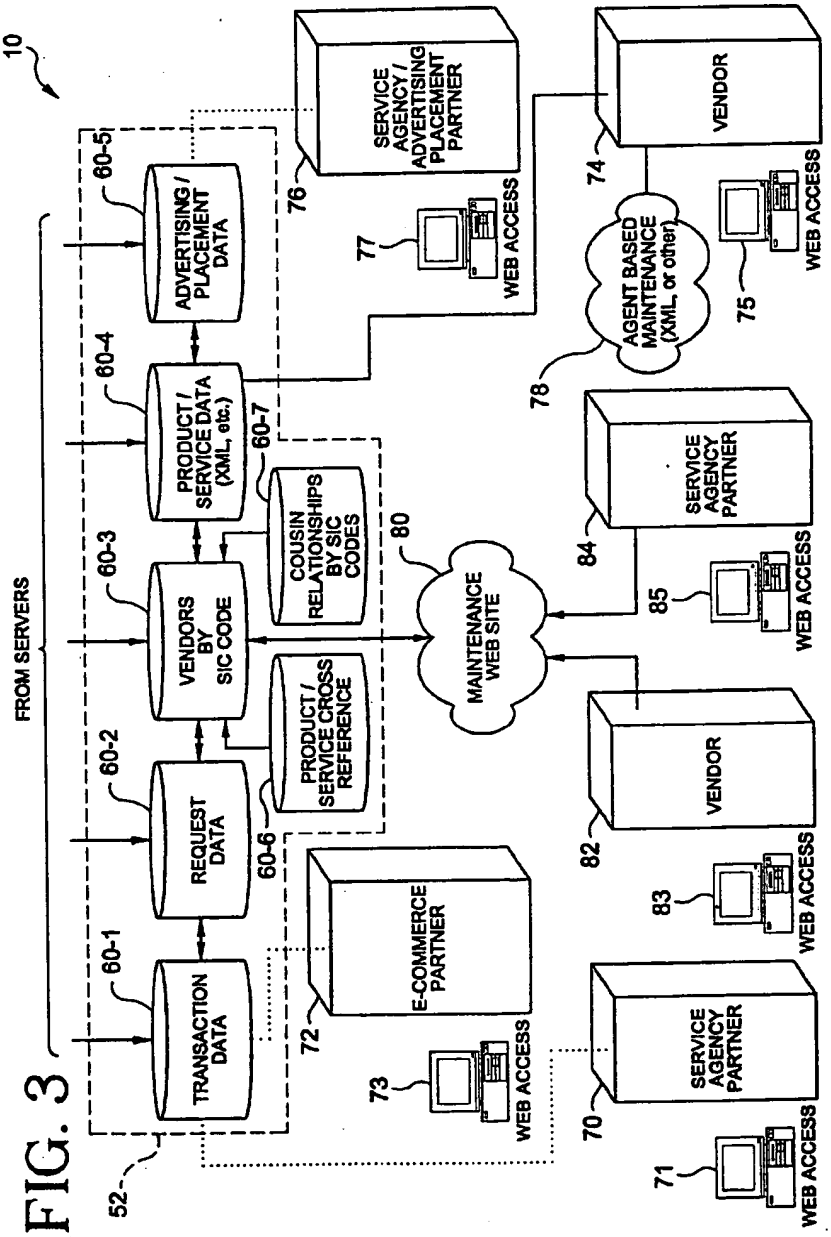

10
FROM SERVERS
52
60-1
TRANSACTION DATA
60-2
REQUEST DATA
60-3
VENDORS BY SIC CODE
60-4
PRODUCT / SERVICE DATA (XML, etc.)
60-5
ADVERTISING / PLACEMENT DATA
60-6
PRODUCT / SERVICE CROSS REFERENCE
60-7
COUSIN RELATIONSHIPS BY SIC CODES
80
MAINTENANCE WEB SITE
70
SERVICE AGENCY PARTNER
71
WEB ACCESS
72
E-COMMERCE PARTNER
73
WEB ACCESS
74
VENDOR
75
WEB ACCESS
76
SERVICE AGENCY / ADVERTISING PLACEMENT PARTNER
77
WEB ACCESS
78
AGENT BASED MAINTENANCE (XML, or other)
82
VENDOR
83
WEB ACCESS
84
SERVICE AGENCY PARTNER
85
WEB ACCESS

FIG. 3

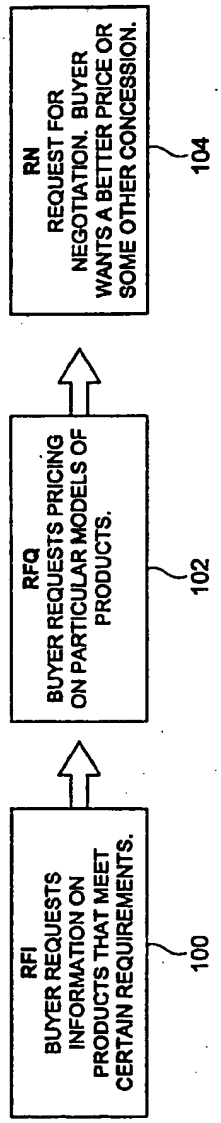

RFI
BUYER REQUESTS INFORMATION ON PRODUCTS THAT MEET CERTAIN REQUIREMENTS.
100
RFQ
BUYER REQUESTS PRICING ON PARTICULAR MODELS OF PRODUCTS.
102
RN
REQUEST FOR NEGOTIATION. BUYER WANTS A BETTER PRICE OR SOME OTHER CONCESSION.
104

FIG. 4

FIG. 5

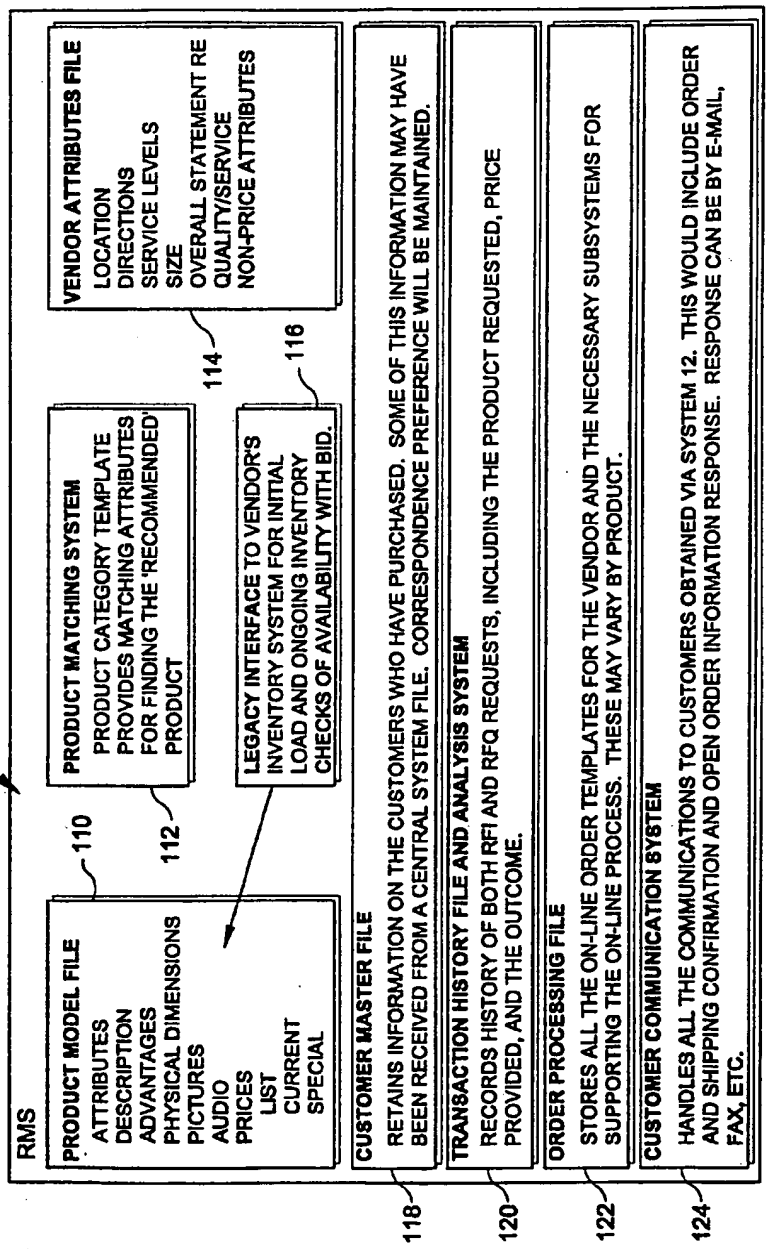

105
RMS
PRODUCT MODEL FILE
ATTRIBUTES
DESCRIPTION
ADVANTAGES
PHYSICAL DIMENSIONS
PICTURES
AUDIO
PRICES
LIST
CURRENT
SPECIAL
110
PRODUCT MATCHING SYSTEM
PRODUCT CATEGORY TEMPLATE
PROVIDES MATCHING ATTRIBUTES
FOR FINDING THE 'RECOMMENDED'
PRODUCT
112
LEGACY INTERFACE TO VENDOR'S
INVENTORY SYSTEM FOR INITIAL
LOAD AND ONGOING INVENTORY
CHECKS OF AVAILABILITY WITH BID.
116
VENDOR ATTRIBUTES FILE
LOCATION
DIRECTIONS
SERVICE LEVELS
SIZE
OVERALL STATEMENT RE
QUALITY/SERVICE
NON-PRICE ATTRIBUTES
114
CUSTOMER MASTER FILE
RETAINS INFORMATION ON THE CUSTOMERS WHO HAVE PURCHASED. SOME OF THIS INFORMATION MAY HAVE
BEEN RECEIVED FROM A CENTRAL SYSTEM FILE. CORRESPONDENCE PREFERENCE WILL BE MAINTAINED.
118
TRANSACTION HISTORY FILE AND ANALYSIS SYSTEM
RECORDS HISTORY OF BOTH RFI AND RFQ REQUESTS, INCLUDING THE PRODUCT REQUESTED, PRICE
PROVIDED, AND THE OUTCOME.
120
ORDER PROCESSING FILE
STORES ALL THE ON-LINE ORDER TEMPLATES FOR THE VENDOR AND THE NECESSARY SUBSYSTEMS FOR
SUPPORTING THE ON-LINE PROCESS. THESE MAY VARY BY PRODUCT.
122
CUSTOMER COMMUNICATION SYSTEM
HANDLES ALL THE COMMUNICATIONS TO CUSTOMERS OBTAINED VIA SYSTEM 12. THIS WOULD INCLUDE ORDER
AND SHIPPING CONFIRMATION AND OPEN ORDER INFORMATION RESPONSE. RESPONSE CAN BE BY E-MAIL,
FAX, ETC.
124

FIG. 6

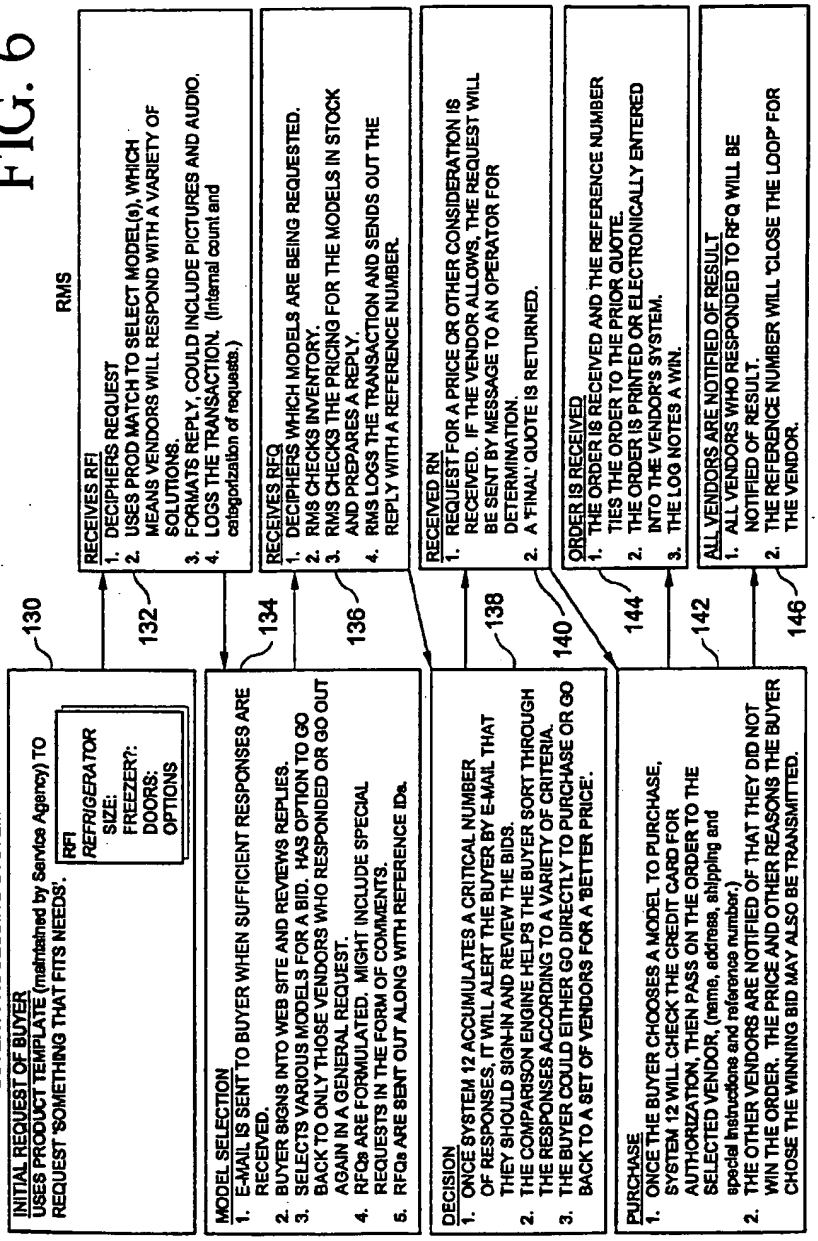

BUYER / PROCESSING SYSTEM
RMS
INITIAL REQUEST OF BUYER
USES PRODUCT TEMPLATE (maintained by Service Agency) TO REQUEST 'SOMETHING THAT FITS NEEDS'.
RFI
REFRIGERATOR
SIZE:
FREEZER?:
DOORS:
OPTIONS
130
132
RECEIVES RFI
1. DECIPHERS REQUEST
2. USES PROD MATCH TO SELECT MODEL(s), WHICH MEANS VENDORS WILL RESPOND WITH A VARIETY OF SOLUTIONS.
3. FORMATS REPLY, COULD INCLUDE PICTURES AND AUDIO.
4. LOGS THE TRANSACTION. (Internal count and categorization of requests.)
MODEL SELECTION
1. E-MAIL IS SENT TO BUYER WHEN SUFFICIENT RESPONSES ARE RECEIVED.
2. BUYER SIGNS INTO WEB SITE AND REVIEWS REPLIES.
3. SELECTS VARIOUS MODELS FOR A BID. HAS OPTION TO GO BACK TO ONLY THOSE VENDORS WHO RESPONDED OR GO OUT AGAIN IN A GENERAL REQUEST.
4. RFQs ARE FORMULATED. MIGHT INCLUDE SPECIAL REQUESTS IN THE FORM OF COMMENTS.
5. RFQs ARE SENT OUT ALONG WITH REFERENCE IDs.
134
RECEIVES RFQ
1. DECIPHERS WHICH MODELS ARE BEING REQUESTED.
2. RMS CHECKS INVENTORY.
3. RMS CHECKS THE PRICING FOR THE MODELS IN STOCK AND PREPARES A REPLY.
4. RMS LOGS THE TRANSACTION AND SENDS OUT THE REPLY WITH A REFERENCE NUMBER.
136
DECISION
1. ONCE SYSTEM 12 ACCUMULATES A CRITICAL NUMBER OF RESPONSES, IT WILL ALERT THE BUYER BY E-MAIL THAT THEY SHOULD SIGN-IN AND REVIEW THE BIDS.
2. THE COMPARISON ENGINE HELPS THE BUYER SORT THROUGH THE RESPONSES ACCORDING TO A VARIETY OF CRITERIA.
3. THE BUYER COULD EITHER GO DIRECTLY TO PURCHASE OR GO BACK TO A SET OF VENDORS FOR A 'BETTER PRICE'.
138
RECEIVED RN
1. REQUEST FOR A PRICE OR OTHER CONSIDERATION IS RECEIVED. IF THE VENDOR ALLOWS, THE REQUEST WILL BE SENT BY MESSAGE TO AN OPERATOR FOR DETERMINATION.
2. A 'FINAL' QUOTE IS RETURNED.
140
ORDER IS RECEIVED
1. THE ORDER IS RECEIVED AND THE REFERENCE NUMBER TIES THE ORDER TO THE PRIOR QUOTE.
2. THE ORDER IS PRINTED OR ELECTRONICALLY ENTERED INTO THE VENDOR'S SYSTEM.
3. THE LOG NOTES A WIN.
144
PURCHASE
1. ONCE THE BUYER CHOOSES A MODEL TO PURCHASE, SYSTEM 12 WILL CHECK THE CREDIT CARD FOR AUTHORIZATION, THEN PASS ON THE ORDER TO THE SELECTED VENDOR, (name, address, shipping and special instructions and reference number.)
2. THE OTHER VENDORS ARE NOTIFIED OF THAT THEY DID NOT WIN THE ORDER. THE PRICE AND OTHER REASONS THE BUYER CHOSE THE WINNING BID MAY ALSO BE TRANSMITTED.
142
ALL VENDORS ARE NOTIFIED OF RESULT
1. ALL VENDORS WHO RESPONDED TO RFQ WILL BE NOTIFIED OF RESULT.
2. THE REFERENCE NUMBER WILL 'CLOSE THE LOOP' FOR THE VENDOR.
146

FIG. 7A

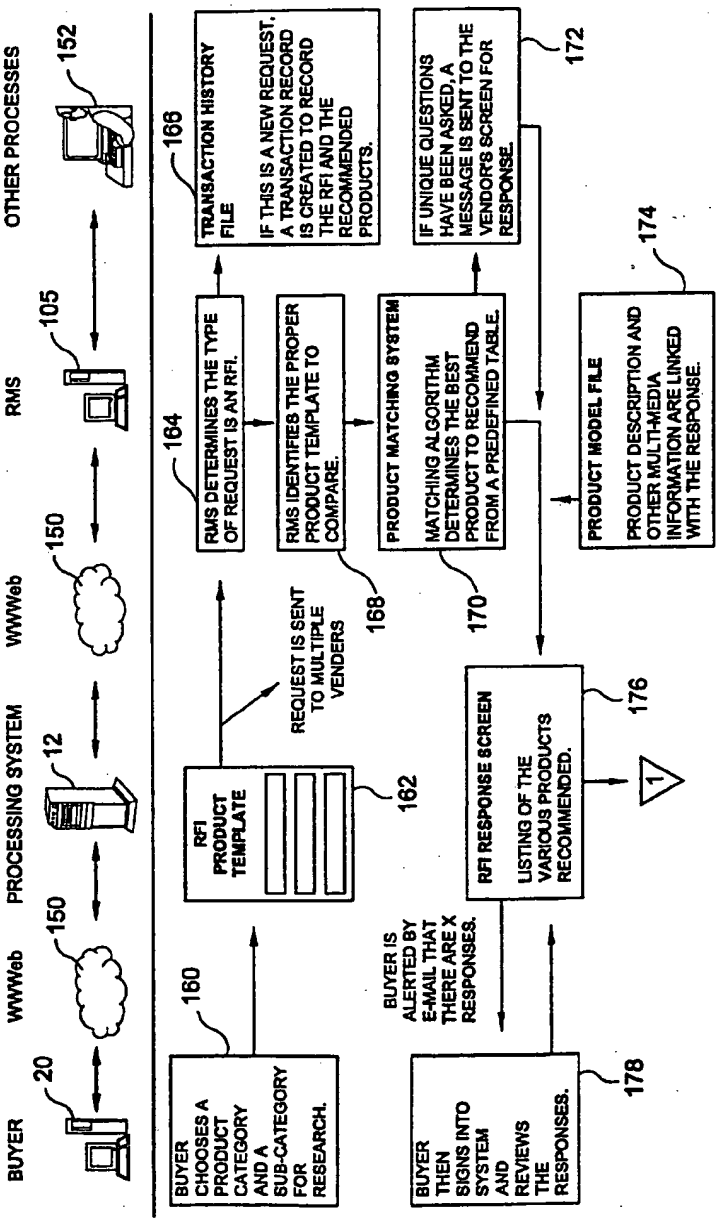

BUYER
WWWeb
PROCESSING SYSTEM
WWWeb
RMS
OTHER PROCESSES
20
150
12
150
105
152
BUYER CHOOSES A PRODUCT CATEGORY AND A SUB-CATEGORY FOR RESEARCH.
160
RFI PRODUCT TEMPLATE
REQUEST IS SENT TO MULTIPLE VENDERS
162
RMS DETERMINES THE TYPE OF REQUEST IS AN RFI.
164
RMS IDENTIFIES THE PROPER PRODUCT TEMPLATE TO COMPARE.
168
TRANSACTION HISTORY FILE
IF THIS IS A NEW REQUEST, A TRANSACTION RECORD IS CREATED TO RECORD THE RFI AND THE RECOMMENDED PRODUCTS.
166
PRODUCT MATCHING SYSTEM
MATCHING ALGORITHM DETERMINES THE BEST PRODUCT TO RECOMMEND FROM A PREDEFINED TABLE.
170
IF UNIQUE QUESTIONS HAVE BEEN ASKED, A MESSAGE IS SENT TO THE VENDOR'S SCREEN FOR RESPONSE.
172
PRODUCT MODEL FILE
PRODUCT DESCRIPTION AND OTHER MULTI-MEDIA INFORMATION ARE LINKED WITH THE RESPONSE.
174
BUYER IS ALERTED BY E-MAIL THAT THERE ARE X RESPONSES.
RFI RESPONSE SCREEN
LISTING OF THE VARIOUS PRODUCTS RECOMMENDED.
176
1
BUYER THEN SIGNS INTO SYSTEM AND REVIEWS THE RESPONSES.
178

FIG. 7B

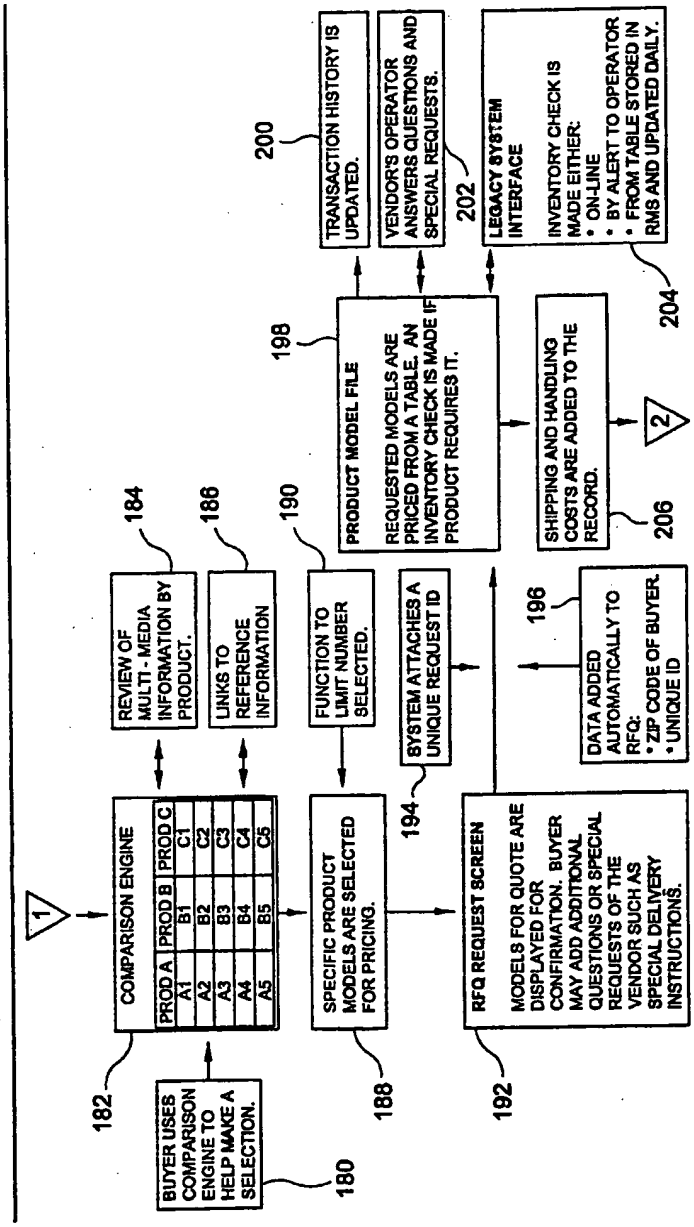

BUYER
PROCESSING SYSTEM
RMS
OTHER PROCESSES
1
2
BUYER USES COMPARISON ENGINE TO HELP MAKE A SELECTION.
180
182
COMPARISON ENGINE
PROD A | PROD B | PROD C
A1 | B1 | C1
A2 | B2 | C2
A3 | B3 | C3
A4 | B4 | C4
A5 | B5 | C5
REVIEW OF MULTI - MEDIA INFORMATION BY PRODUCT.
184
LINKS TO REFERENCE INFORMATION
186
SPECIFIC PRODUCT MODELS ARE SELECTED FOR PRICING.
188
FUNCTION TO LIMIT NUMBER SELECTED.
190
SYSTEM ATTACHES A UNIQUE REQUEST ID
194
RFQ REQUEST SCREEN
MODELS FOR QUOTE ARE DISPLAYED FOR CONFIRMATION. BUYER MAY ADD ADDITIONAL QUESTIONS OR SPECIAL REQUESTS OF THE VENDOR SUCH AS SPECIAL DELIVERY INSTRUCTIONS.
192
DATA ADDED AUTOMATICALLY TO RFQ:
• ZIP CODE OF BUYER.
• UNIQUE ID
196
PRODUCT MODEL FILE
REQUESTED MODELS ARE PRICED FROM A TABLE. AN INVENTORY CHECK IS MADE IF PRODUCT REQUIRES IT.
198
TRANSACTION HISTORY IS UPDATED.
200
VENDOR'S OPERATOR ANSWERS QUESTIONS AND SPECIAL REQUESTS.
202
SHIPPING AND HANDLING COSTS ARE ADDED TO THE RECORD.
206
LEGACY SYSTEM INTERFACE
INVENTORY CHECK IS MADE EITHER:
• ON-LINE
• BY ALERT TO OPERATOR
• FROM TABLE STORED IN RMS AND UPDATED DAILY.
204

FIG. 7C

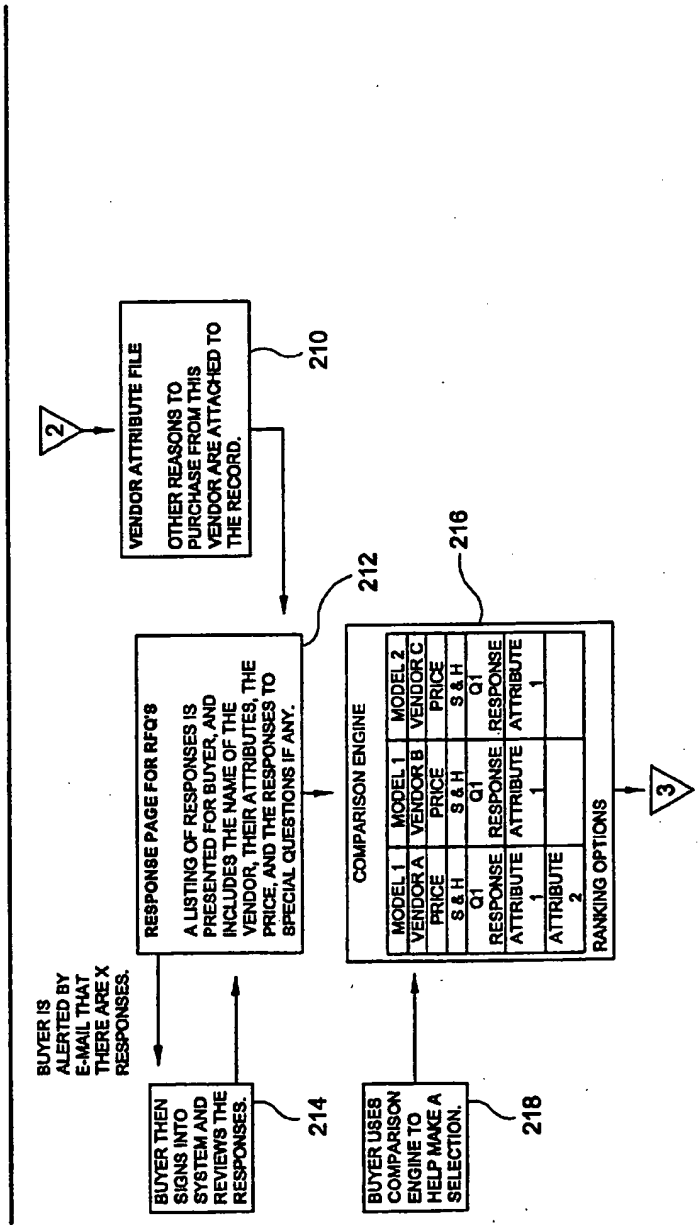

BUYER
PROCESSING SYSTEM
RMS
OTHER PROCESSES
2
VENDOR ATTRIBUTE FILE
OTHER REASONS TO PURCHASE FROM THIS VENDOR ARE ATTACHED TO THE RECORD.
210
BUYER IS ALERTED BY E-MAIL THAT THERE ARE X RESPONSES.
RESPONSE PAGE FOR RFQ'S
A LISTING OF RESPONSES IS PRESENTED FOR BUYER, AND INCLUDES THE NAME OF THE VENDOR, THEIR ATTRIBUTES, THE PRICE, AND THE RESPONSES TO SPECIAL QUESTIONS IF ANY.
212
216
COMPARISON ENGINE
MODEL 1 | MODEL 1 | MODEL 2
VENDOR A | VENDOR B | VENDOR C
PRICE | PRICE | PRICE
S & H | S & H | S & H
Q1 | Q1 | Q1
RESPONSE | RESPONSE | RESPONSE
ATTRIBUTE 1 | ATTRIBUTE 1 | ATTRIBUTE 1
ATTRIBUTE 2
RANKING OPTIONS
3
BUYER THEN SIGNS INTO SYSTEM AND REVIEWS THE RESPONSES.
214
BUYER USES COMPARISON ENGINE TO HELP MAKE A SELECTION.
218

FIG. 7D

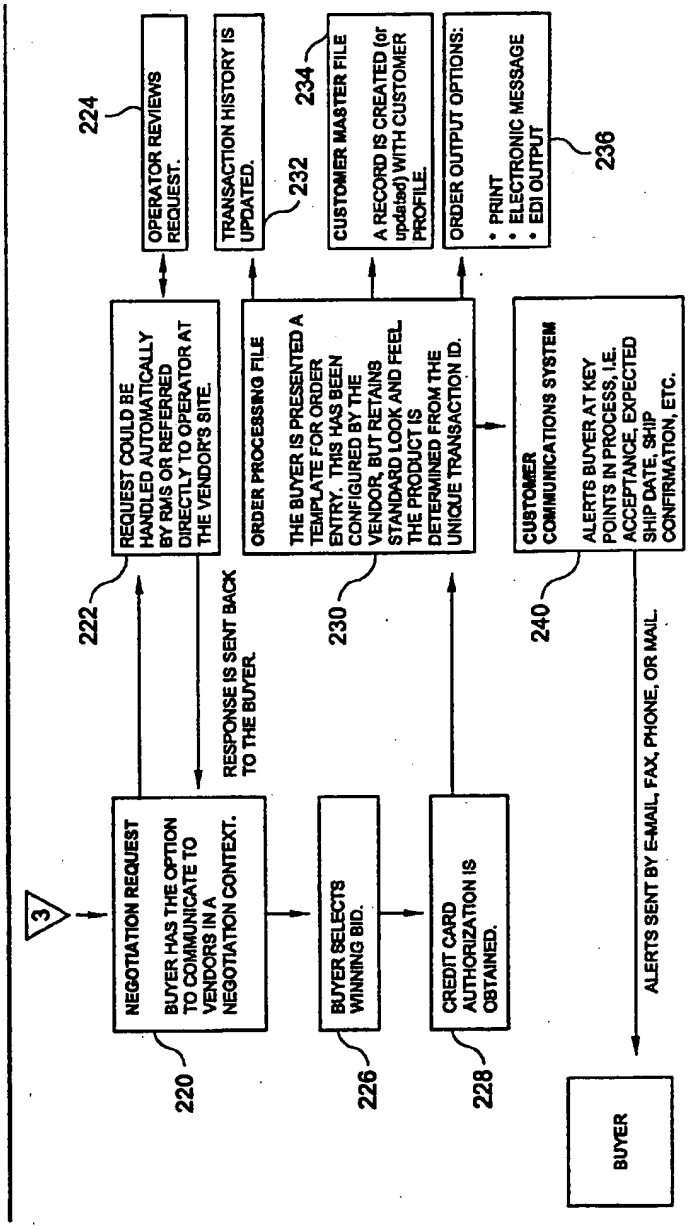

BUYER
PROCESSING SYSTEM
RMS
OTHER PROCESSES
3
NEGOTIATION REQUEST
BUYER HAS THE OPTION TO COMMUNICATE TO VENDORS IN A NEGOTIATION CONTEXT.
220
REQUEST COULD BE HANDLED AUTOMATICALLY BY RMS OR REFERRED DIRECTLY TO OPERATOR AT THE VENDOR'S SITE.
222
OPERATOR REVIEWS REQUEST.
224
RESPONSE IS SENT BACK TO THE BUYER.
BUYER SELECTS WINNING BID.
226
ORDER PROCESSING FILE
THE BUYER IS PRESENTED A TEMPLATE FOR ORDER ENTRY. THIS HAS BEEN CONFIGURED BY THE VENDOR, BUT RETAINS STANDARD LOOK AND FEEL. THE PRODUCT IS DETERMINED FROM THE UNIQUE TRANSACTION ID.
230
TRANSACTION HISTORY IS UPDATED.
232
CUSTOMER MASTER FILE
A RECORD IS CREATED (or updated) WITH CUSTOMER PROFILE.
234
CREDIT CARD AUTHORIZATION IS OBTAINED.
228
ORDER OUTPUT OPTIONS:
• PRINT
• ELECTRONIC MESSAGE
• EDI OUTPUT
236
CUSTOMER COMMUNICATIONS SYSTEM
ALERTS BUYER AT KEY POINTS IN PROCESS, I.E. ACCEPTANCE, EXPECTED SHIP DATE, SHIP CONFIRMATION, ETC.
240
ALERTS SENT BY E-MAIL, FAX, PHONE, OR MAIL.
BUYER

FIG. 7E

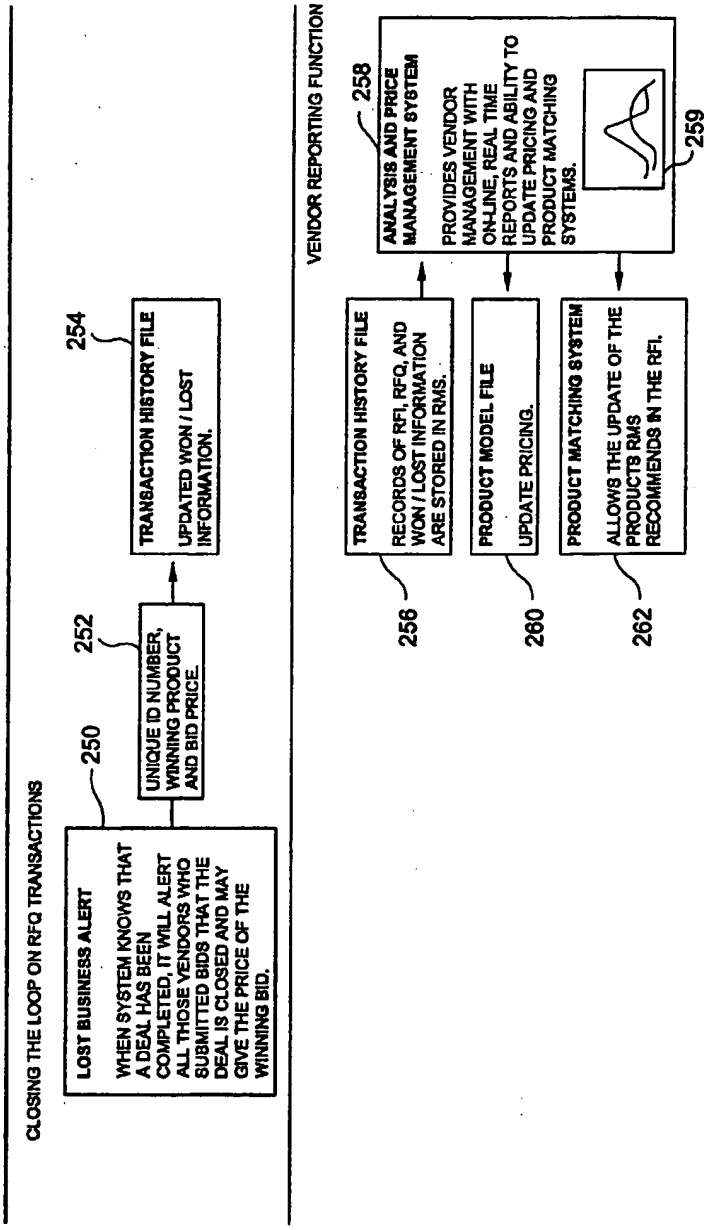
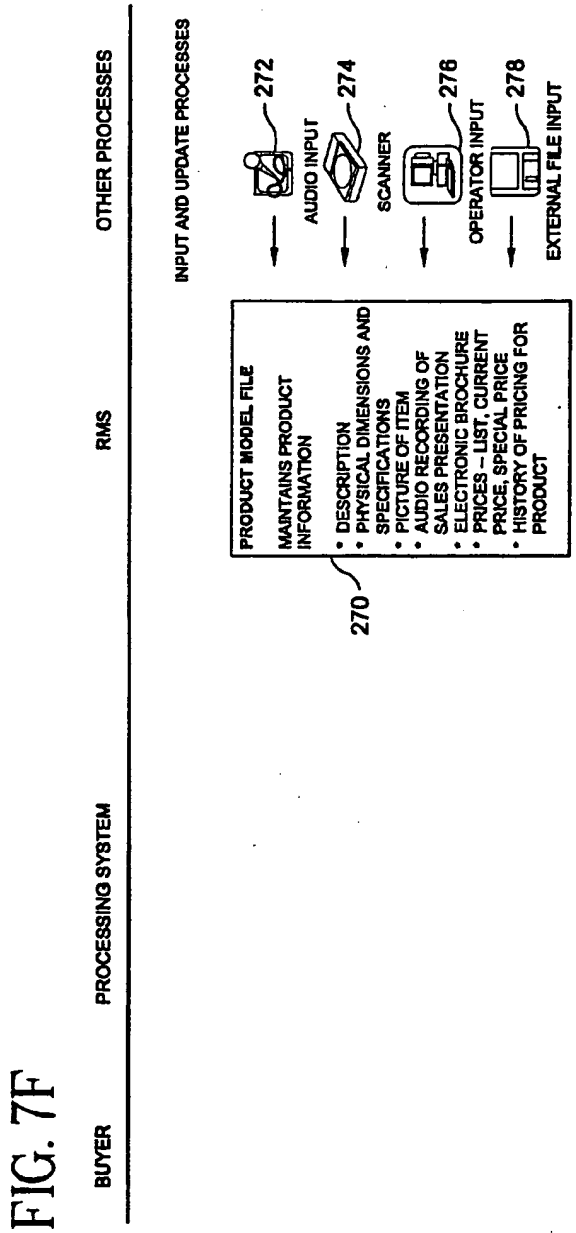

BUYER
PROCESSING SYSTEM
RMS
OTHER PROCESSES
CLOSING THE LOOP ON RFQ TRANSACTIONS
LOST BUSINESS ALERT
WHEN SYSTEM KNOWS THAT A DEAL HAS BEEN COMPLETED, IT WILL ALERT ALL THOSE VENDORS WHO SUBMITTED BIDS THAT THE DEAL IS CLOSED AND MAY GIVE THE PRICE OF THE WINNING BID.
250
UNIQUE ID NUMBER, WINNING PRODUCT AND BID PRICE.
252
TRANSACTION HISTORY FILE
UPDATED WON / LOST INFORMATION.
254
VENDOR REPORTING FUNCTION
TRANSACTION HISTORY FILE
RECORDS OF RFI, RFQ, AND WON / LOST INFORMATION ARE STORED IN RMS.
256
PRODUCT MODEL FILE
UPDATE PRICING.
260
PRODUCT MATCHING SYSTEM
ALLOWS THE UPDATE OF THE PRODUCTS RMS RECOMMENDS IN THE RFI.
262
ANALYSIS AND PRICE MANAGEMENT SYSTEM
PROVIDES VENDOR MANAGEMENT WITH ON-LINE, REAL TIME REPORTS AND ABILITY TO UPDATE PRICING AND PRODUCT MATCHING SYSTEMS.
258
259

FIG. 7F


BUYER
PROCESSING SYSTEM
RMS
OTHER PROCESSES
INPUT AND UPDATE PROCESSES
272
AUDIO INPUT
274
SCANNER
276
OPERATOR INPUT
278
EXTERNAL FILE INPUT
PRODUCT MODEL FILE
MAINTAINS PRODUCT INFORMATION
• DESCRIPTION
• PHYSICAL DIMENSIONS AND SPECIFICATIONS
• PICTURE OF ITEM
• AUDIO RECORDING OF SALES PRESENTATION
• ELECTRONIC BROCHURE
• PRICES – LIST, CURRENT PRICE, SPECIAL PRICE
• HISTORY OF PRICING FOR PRODUCT
270

INTERNATIONAL SEARCH REPORT

Intern nal Application No
PCT/US 99/26868

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 758 328 A (GIOVANNOLI) 26 May 1998 (1998-05-26) column 2, line 35 -column 3, line 21 column 3, line 55 -column 6, line 11 column 6, line 24 - line 34 column 6, line 66 -column 7, line 47	1-20
A	EP 0 370 146 A (STRATEGIC PROCESSING CORPORATION) 30 May 1990 (1990-05-30) column 7, line 20 -column 10, line 22 column 14, line 28 -column 20, line 44	1-20
A	WO 96 21192 A (CITIBANK, N.A.) 11 July 1996 (1996-07-11) page 4, line 27 -page 9, line 30	1-20

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 March 2000	31/03/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax (+31–70) 340–3016	Abram, R

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INTERNATIONAL SEARCH REPORT

information on patent family members

Inter. nal Application No
PCT/US 99/26868

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